Comprehensive Handbook on

Safety Auditor and Employability Skills

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Preface

In today's rapidly evolving industrial landscape, the importance of safety cannot be overstated. As organizations strive to create safer workplaces, the role of the Safety Auditor has become increasingly vital. Understanding this critical need, Safety Skill Development Foundation (SSDF) in collaboration with CORE-EHS Solutions, has developed this comprehensive handbook to equip participants with the knowledge and skills necessary to excel in their roles as Safety Auditor.

This handbook is designed not only to provide a thorough grounding in the fundamental principles of occupational health and safety but also to align participants with current industry norms and innovative practices. As the field of safety management continues to advance, it is essential for professionals to stay updated with the latest regulations, technologies, and methodologies. This handbook serves as a bridge between traditional safety practices and modern, forward-thinking approaches that can be applied in diverse industrial settings.

By studying this material, participants will gain a deep understanding of the National Occupational Standards (NOS) relevant to their roles. Each section is crafted to ensure that learners can comprehend, implement, and uphold the highest standards of safety within their workplaces. Beyond technical knowledge, this handbook also emphasizes the development of innovative skills that are crucial for navigating the complexities of today's industrial environments.

At SSDF, we believe that safety is a continuous learning process. This handbook is not just a guide for passing assessments but a resource that participants can refer to throughout their careers. It is our hope that this material will empower Safety Auditors to contribute meaningfully to their organizations, ensuring that every worker can return home safely at the end of the day.

We are confident that the knowledge and skills gained from this handbook will not only enhance participants' professional capabilities but also foster a culture of safety and responsibility in their respective workplaces. As you embark on this learning journey, we encourage you to fully engage with the content, apply what you learn, and continuously strive for excellence in your role as a Safety Auditor.

Welcome to the future of safety management.

Thank you.

J K Anand (Chairman)

Safety Skill Development Foundation (SSDF).

Contents

1. Introduction

In the ever-evolving industrial landscape, where technological advancements and operational complexities intersect, ensuring the safety and well-being of workers is a critical imperative. The dynamic nature of modern industries, coupled with the potential for accidents and hazards, underscores the need for vigilant oversight and proactive measures to safeguard both human life and organizational assets.

The Safety Auditor, a pivotal figure within this realm, is tasked with navigating this complex terrain. Their role extends beyond mere compliance with regulations; it encompasses a holistic approach to risk management, hazard identification, and the promotion of a safety-conscious culture. By conducting comprehensive audits, inspections, and assessments, Safety Auditors play a vital role in ensuring that industrial operations are conducted in a manner that prioritizes the protection of workers, the environment, and the organization's reputation.

Purpose of the Handbook

This handbook has been meticulously developed by **SSDF** to serve as a comprehensive resource for individuals training to become Safety Auditor. It is designed to equip participants with the necessary knowledge and skills to not only understand and apply existing safety standards but also to ensure that industrial operations are conducted in a safe and compliant manner. By bridging the gap between theoretical knowledge and practical application, this handbook ensures that Safety Auditors are fully prepared to meet the challenges of their roles.

Scope and Content

The content of this handbook is aligned with the **National Occupational Standards (NOS)** for the Safety Auditor qualification (SSD/VSQ/Q0105). It covers a broad range of topics that are essential for effective safety management in various industrial settings. These include:

- **Concept of Safety Audit, Need, Scope and Methodologies of safety audit**: This section provides the knowledge & skills required by the professional to understand the concept of safety audit, its approach, stages, scope, audit procedure, PDCA cycle and audit cycles to conduct safety audit at the workplace.

- **Hazard Identification, categories and control:** This section describes the knowledge and skills required by the professional to identify hazards at the workplace, severity of hazards, risk rating, protection overview and improved methodologies.

- **Risk Score Evaluation of Hazards:** This section describes the knowledge & skills required by the professional to calculate risk score & ratings of a hazard with the help of a 5x5 risk matrix in view of the likelihood and severity of the hazard.

- **Safety Audit Report Preparation:** Participants will learn the concept of an audit and inspection in an organization and prepare an audit report. Further it will help the professional in gathering valuable information before and after audit.

- **Statutes and Legislative requirements in Health and Safety:** A thorough overview of the regulatory framework governing occupational health and safety, including national and international standards, is provided.

- **Plan, Organize, and Monitor:** This section describes the knowledge & skills required by the professionals about planning, organizing, and monitoring of their work to provide the expected outcomes efficiently & ensuring quality of the work.

- **Employability Skills:** In addition to technical knowledge, the handbook also addresses the development of key employability skills, such as communication, teamwork, and digital literacy, which are essential for career success in the safety management field.

Learning Objectives

The primary objective of this handbook is to prepare participants for the responsibilities of a Safety Auditor by providing them with a clear understanding of safety management principles, current industry norms, roles, responsibilities and innovative audit practices. By the end of this course, participants will be able to:

- Safety Auditing techniques

- Safety Regulations and Standards.

- Hazard Identification and Assessment.

- Risk Evaluation.

- Safety Regulations and Standards

- Safety Auditing documentation & report preparation.

Alignment with Industry Norms and Innovation

The industrial sector is constantly evolving, with new technologies, processes, and regulations emerging

regularly. This handbook not only teaches established safety practices but also introduces participants to innovative skills and approaches that are essential for staying ahead in this dynamic environment. Whether it's understanding the latest advancements in safety technology or learning how to implement new regulatory requirements, this handbook ensures that Safety Auditors are well-equipped to handle the demands of modern industry.

Who Should Use This Handbook

This handbook is intended for anyone pursuing a career as a Safety Auditor or involved in safety management within industrial settings. It is particularly beneficial for:

- **Safety Professionals:** Safety officers, managers, and other professionals already working in the field can use this handbook as a reference to update their knowledge and enhance their skills related to safety audits.

- **Operations and Maintenance Personnel:** Supervisors, foremen, and maintenance technicians.

- **Consultants:** Safety consultants, environmental consultants, and risk management consultants.

- **Regulatory Authorities:** Inspectors and compliance officers from regulatory agencies.

How to Use This Handbook

Participants are encouraged to engage deeply with the content of this handbook, using it as both a study guide and a practical reference tool. Each section is

designed to build on the previous one, leading to a comprehensive understanding of the Safety Auditor role. Practical exercises, case studies, and assessment guidelines are included to reinforce learning and provide real-world context.

To get the most out of this handbook:

- **Study each section thoroughly, t**aking the time to understand the key concepts and how they apply to real-world situations.

- **Engage with the practical exercises** and case studies to see how theoretical knowledge translates into practice.

- **Refer to the assessment guidelines** to prepare for evaluations and ensure you meet the required standards for certification.

- **Use the additional resources** section to explore further reading and deepen your understanding of complex topics.

The Path Forward

As you embark on your journey to becoming a Safety Auditor, this handbook will be your guide. The knowledge and skills you acquire through this course will not only help you pass your assessments but also equip you to make a real difference in the safety and well-being of workers in your organization. At SSDF, we are committed to supporting you every step of the way, and we are confident that with dedication and hard work, you will emerge as a competent and confident Safety Auditor, ready to take on the challenges of your profession.

2. Overview of this Program

A **Safety Auditor** training program typically covers a wide range of topics related to workplace safety, risk management, and regulatory compliance. The specific content may vary depending on the level of training and the target audience.

Key Responsibilities:

Safety auditors play a crucial role in ensuring workplace safety and compliance.

- Conducting Safety Audits

- Identifying Hazards

- Assessing Risks & Developing control measures

- Enforcing Safety Regulations

- Investigating incidents Conduct safety drills and training sessions

- Providing recommendations

- Maintaining documents

Job Description

Safety Auditor is responsible for scrutiny of an organization safety process

- To identify gaps, loopholes, and health and safety and suggests measures to control them.

- He/she is also responsible to identify gaps in compliance of safety regulations and suggest methodologies to improve the safety compliance and processes.

Personal Attributes

He/ She should be mentally and professionally fit to take responsibility to ensure compliance of health and safety standards at the workplace with his/her integrity, objectivity, independence, knowledge of law, expression, and code of ethics.

3. Qualification Parameters

Minimum Job Entry Age: 18 years

Educational Qualifications:

- **Completed 4 years UG program** (in science) with 3 Years of experience

- **Completed 3 years Diploma after 10th** (in relevant field) with 3-5 Years of experience (4.5 Years)

- **10th Class + I.T.I** with 5-10 Years of experience (5.5 Years)

- **Previous relevant Qualification of NSQF Level (4.5)** 1-2 Years of experience (1.5 Years)

- **Previous relevant Qualification of NSQF Level (4)** 3 Years of experience

Training Duration:

- **For Regular Course- Duration:** 720 hours (approximately 90 days).

- **For RPL- Duration:** 40 hours (approximately 5 days)

- **Mode of Training:** Classroom instruction, practical exercises, and on-the-job training.

Qualification Levels:

- **NSQF Level:** 5, aligned with the National Skill Qualifications Framework.

4. Assessment Guidelines

Assessment Methods:

- **Written Examinations:** Multiple-choice questions, short-answer questions, and essay-type questions to test theoretical knowledge.

- **Practical Assessments:** Hands-on tasks to assess the ability to apply knowledge in real-world scenarios.

- **Viva Voce:** Oral examinations to assess communication skills and understanding of concepts.

- **Projects:** Practical projects to demonstrate the application of learned skills.

Grading System:

- **Grade A (70% and above):** Excellent performance, showing a strong understanding and application of safety protocols.

- **Grade B (60% to 69%):** Good performance, with a solid grasp of safety concepts and practical skills.

- **Grade C (50% to 59%):** Satisfactory performance, meeting basic requirements.

- **Fail (Below 50%):** Insufficient performance, requiring further study and re-assessment.

Re-assessment Opportunities:

- Trainees who fail can re-attempt the assessment in the next three months.

- Re-assessment focuses only on the failed NOS unless the overall score is below 50%, requiring a full re-assessment.

5. Glossary of Terms

Understanding the terminology used in occupational safety, health, and employability skills is crucial for effective communication and application of the principles covered in this handbook. The following glossary defines key terms that are frequently used in the field.

- **Accident:** An unexpected event that results in injury, illness, or damage to property.

- **Accident Cost-Iceberg Theory:** A theory that illustrates the hidden costs of accidents, beyond direct expenses.

- **Audit:** A systematic review of procedures, policies, and practices to ensure compliance with legal requirements and standards.

- **Compliance:** Adherence to laws, regulations, and standards that govern occupational safety and health.

- **Contractor:** An individual or company hired to perform specific tasks or provide services that are not typically handled by the organization's employees.

- **Emergency Protocol:** A set of procedures designed to respond to emergencies, such as fires, medical incidents, or chemical spills, to minimize harm and damage.

- **Hazard:** Any source of potential harm or adverse health effect on a person or persons.

- **Hierarchy of Controls:** A framework used to minimize or eliminate exposure to hazards, ranked from most effective (elimination) to least effective (personal protective equipment).

- **Incident:** An event that could have resulted in an accident but did not, often referred to as a "near miss."

- **Occupational Safety and Health (OSH):** The field focused on the safety, health, and welfare of people at work.

- **Personal Protective Equipment (PPE):** Equipment worn by workers to protect against hazards in the workplace, such as helmets, gloves, and safety glasses.

- **Risk Assessment:** The process of identifying hazards, evaluating risks, and determining appropriate control measures to mitigate those risks.

- **Safety Culture:** The shared values, beliefs, and practices that influence the attitudes and behaviors of employees towards safety in the workplace.

- **Safety Auditor:** A professional responsible for ensuring that industrial and commercial operations are conducted in a safe and compliant manner.

- **Safety Management System:** A comprehensive system for managing safety risks and ensuring compliance with safety regulations.

6. Acronyms

Acronyms are often used to refer to key concepts, organizations, and regulations in the fields of occupational safety and employability skills. Below is a list of common acronyms used throughout this handbook:

- **BOCW:** Building and Other Construction Workers (Act)
- **EHS:** Environmental, Health, and Safety
- **EMS:** Environmental Management Systems
- **ILO:** International Labour Organization
- **IMS:** Integrated Management Systems
- **ISO:** International Organization for Standardization
- **MSDS:** Material Safety Data Sheet
- **NOS:** National Occupational Standards
- **NCVET:** National Council for Vocational Education and Training, Government of India
- **NSQF:** National Skill Qualifications Framework
- **OSHA:** Occupational Safety and Health Administration
- **OSH:** Occupational Safety and Health
- **PDCA:** Plan, Do, Check & Act
- **PPE:** Personal Protective Equipment
- **QMS:** Quality Management System
- **SSDF:** Safety Skill Development Foundation

7. National Occupational Standards (NOS)

National Occupational Standards (NOS) are a set of standards that describe the skills, knowledge, and competencies required to perform a specific job or task effectively in a particular industry. They are developed by industry experts and stakeholders, often in collaboration with government agencies or sector skills councils, to ensure that the workforce meets the industry's current and future needs.

Key Features of National Occupational Standards:

1. **Competency-Based:** NOS are designed around the competencies needed for specific job roles. They outline what a person should be able to do, know, and understand to perform their job effectively.

2. **Industry-Specific:** NOS are tailored to specific industries, ensuring that the skills and knowledge are relevant and up-to-date with the industry's practices, technologies, and regulatory requirements.

3. **Standardization:** By providing a consistent benchmark for skills and competencies, NOS help standardize the qualifications and training across an industry, making it easier for employers to identify qualified candidates and for workers to understand the expectations of their roles.

4. **Foundation for Qualifications:** NOS often form the basis for developing vocational qualifications, training programs, and certification processes. For example, they are used to create National Vocational Qualifications (NVQs) or similar qualifications in other countries.

5. **Guidance for Employers and Employees:** Employers use NOS to develop job descriptions, assess employee performance, and design training programs. Employees can use NOS to understand the skills they need to develop for career progression.

6. **Support for Workforce Development:** NOS are instrumental in workforce planning and development, helping industries ensure that their employees are skilled, competent, and able to meet the demands of their roles.

Global Perspective:

While the term "National Occupational Standards" is commonly used in countries like the UK and India, many other countries have similar frameworks, though they might use different terms (e.g., "Occupational Standards," "Competency Standards"). The goal remains the same: to create a skilled and competent workforce that can meet industry needs and support economic development.

7.1. NOS 01: Concept of Safety Audit, Need, Scope and Methodologies of safety audit (SSD/VSQ/N0113)

Overview: The National Occupational Standard (NOS) 01: Concept of Safety Audit, Need, Scope and Methodologies of safety audit (SSD/VSQ/N0113). This NOS describes the knowledge & skills required by the professional to understand the concept of safety audit, its approach, stages, scope, audit procedure, PDCA cycle and audit cycles to conduct safety audit at the workplace.

Scope: The scope of SSD/VSQ/N0113 encompasses several critical aspects of occupational safety, which include:

- Understand & perform an audit with the schematic approach:
    - It is a structured method for conducting an audit, used in safety audits.
    - It involves breaking down the audit process into a series of interconnected steps, visualized as a diagram or schematic.
- Identify and understand audit in different audit stage:
    - An audit is a systematic examination to assess their accuracy, completeness, and compliance with relevant laws and regulations.
    - Audits can be classified into different stages based on their purpose, scope, and timing.
- Suggest continuous improvement cycles in the system.
    - Continuous improvement is a fundamental principle in safety management, ensuring that systems and processes are constantly evolving to address emerging risks, enhance efficiency, and promote a safer working environment.
- **Learning Objectives:** The learning objectives of this NOS are designed to
- Recognize the importance of safety audits in preventing accidents, injuries, and fatalities.
- Understand the difference between various types of safety audits (e.g., general, specific, compliance) and their respective scopes.
- Describe & familiarize oneself with various methodologies used in safety audits, such as checklists, inspections, interviews, and observations.

Performance Criteria: To effectively meet the goals of SSD/VSQ/N0113, individuals are expected to demonstrate competency in the following areas:

- **Concept of safety Audit:**
    - Understand the concept of a safety audit and its significance in workplace safety.
    - Understand the importance of audits and responsibilities of an auditor.
    - Understand audit technique-vouching, confirmation, reconciliation, testing, analysis, scanning, inquiry, verification posting, flow chart and observations.
- **Safety Audit Process & Stages:**
    - Understand safety audit methodologies, its planning, notification and opening meetings for safety audit.
    - Understand the pre-audit preparations, first, second, third & fourth stages of the safety audit.
    - Understand field work, getting management's response and report drafting for safety audit.
    - Understand closing meeting, final audit report distribution and follow-up for safety audit.
- **Types and scope of safety audit:**
    - Understand the scope of internal and external audit, reasons & advantages.
    - Understand first-party, second-party and third-party audits.
    - Understanding the scope of the compliance audit, program audit and management system audit.

- Understanding the scope of audit for a task, program, activity, project & machinery.

- **PDCA Cycle for Safety Audit Process:**

  - Understand the safety management system and the requirement of Pla-Do-Check-Act (PDCA) cycle in safety management system.

  - Understand and analyze "Plan" & "Do" stages of PDCA cycle.

  - Understand and analyze "Check" & "Act" stages of PDCA cycle.

- **Theory (60 Marks):**

- Assesses the understanding of safety audit scope, methodologies, types, process, and stages.

- **Practical (40 Marks):**

  - Evaluates the ability to conduct safety audits, hazard identification & risk evaluation, report preparations, and roles & responsibilities.

NOS 01: Concept of Safety Audit, Need, Scope and Methodologies of safety audit (SSD/VSQ/N0113) outlines the essential knowledge and skills a professional need to comprehend the concept of safety audits, including their approach, stages, scope, procedures, PDCA cycle, and audit cycles, in order to effectively conduct safety audits in the workplace.

7.2. NOS 02: Hazard Identification, categories and control (SSD/VSQ/N0130)

Overview: The National Occupational Standard (NOS) 02: Hazard Identification, categories and control (SSD/VSQ/N0130) is designed to equip learners with the essential skills and knowledge required to identify hazards at the workplace, severity of hazards, risk rating, protection overview and improved methodologies.

Scope: The scope of SSD/VSQ/N0130 includes the following key components:

- Identify hazards and categories the hazards

  - This involves pinpointing potential dangers or conditions that could cause harm to employees, visitors, or the environment.

  - Hazards can range from physical hazards like slippery floors or faulty equipment to chemical hazards like toxic substances

- **Implement Hierarchy of control in improvement methodologies**

  - Assess existing controls and determine their effectiveness in mitigating risks.

  - Propose strategies to implement the Hierarchy of Control, starting with the most effective measures (elimination, substitution, engineering controls) and progressing to administrative controls and personal protective equipment (PPE) as necessary.

  - Oversee the implementation of recommended control measures to ensure they are effective and comply with safety regulations.

- **Understand hidden risk in improved methodologies**

  - Evaluating unforeseen consequences & assessing how changes might lead to unintended negative outcomes, such

as accidents, injuries, or property damage.

  - Analyzing underlying causes through Investigating the root causes of potential risks to prevent them from occurring.

Learning Objectives: The learning objectives of NOS 02 focus on providing learners with a practical and comprehensive understanding of safety audit & it's methodologies. The key learning objectives include:

- **Define hazard identification:**

  Understand the process of identifying potential sources of harm or injury in the workplace.

- **Identify hazard categories:**

  Recognize different types of hazards, such as physical, chemical, biological, ergonomic, and psychosocial.

Apply hazard identification techniques:

Use various methods (e.g., checklists, inspections, job safety analysis) to identify hazards effectively.

Evaluate hazard severity and likelihood:

Assess the potential consequences of hazards and their probability of occurrence.

Performance Criteria: To successfully meet the standards set by SSD/VSQ/N0130, learners are

expected to demonstrate competence in the following areas:

- **Basic Hazard Identification:**
  - Understand the basic definitions: Hazards, unsafe conditions & acts, incidents & accidents such as near-miss, first-aid injury, lost time injury, fatal & other incidents.
  - Understand hazard categories and risks.
  - Know the different types of safety signs and signals.

- **Hierarchy of Control:**
  - Understand the hierarchy of controls in safety
  - Understanding importance of each hierarchy of control
  - Understanding the steps in the hierarchy of control

- **Basic Hazard categories and control:**
  - Understand different hazard categories & control such as Electricity, fire, lifting/rigging tools & tackles, equipment & machinery.
  - Understand different workplace hazard categories & control such as Work at Height, confined space, Excavation, lone working, and slips & trips.
  - Understand different workplace hazard categories & control such as movement of workforce, work related driving and vehicles at workplace.

  - Understand hazardous substances hazard categories & control.
  - Understand Musculoskeletal disorders, manual handling & load handling equipment hazard categories & control.
  - Understand Noise, vibration, radiation, mental ill-health, violence at work, substance abuse at workplace

Assessment Criteria: The assessment for NOS 02 is divided into theoretical and practical components, ensuring that learners are evaluated on both their knowledge and their ability to apply that knowledge in real-world scenarios:

- **Theory (60 Marks):**
  - Assesses the learner's understanding of various hazards, risks & control measures at workplace.

- **Practical (40 Marks):**
  - Evaluates the learner's ability to identify hazards, assess risk.

Hazard Identification, categories and control (SSD/VSQ/N0130) provides a comprehensive framework for identification of hazards, its types, risks & control measures. By understanding the hazards, categories of hazards, risks & hierarchy of control measures, the participants can conduct comprehensive safety audit effectively. Adhering to this standard not only enhances workplace safety but also helps organizations comply with regulatory requirements and improve their overall safety performance.

7.3. NOS 3: Risk Score Evaluation of Hazards (SSD/VSQ/N0114)

Overview: The National Occupational Standard (NOS) 3: Risk Score Evaluation of Hazards (SSD/VSQ/N0114) focuses on the risk score & ratings of the hazard with the help of a 5X5 risk matrix in view of the likelihood and severity of the hazard.

Scope: The scope of SSD/VSQ/N0114 includes the following key areas:

- **Identify hazard and carry out risk assessment of the hazard.**
  - It covers the key aspects of identifying various types of hazards, evaluating their risks, prioritizing them, and implementing appropriate control measures
  - It emphasizes the importance of documentation, monitoring, and

    collaboration with stakeholders in ensuring a safe workplace.

- **Gather information as per existing HIRA (Hazard Identification & Risk Assessment).**
  - It involves collecting data and information to update or validate an existing Hazard Identification and Risk Assessment (HIRA) document.
  - Collecting relevant information, such as changes in work processes, equipment, personnel, or regulatory requirements & confirming the

accuracy of previously identified hazards and identifying any new ones.

- **Analyze and suggest risk control for different categories of hazards**

  o In-depth examination of various types of hazards, such as physical, chemical, biological, ergonomic, and psychosocial.

  o Evaluating the potential consequences of each hazard and its probability of occurrence.

  o Proposing effective measures to eliminate or reduce the risk associated with different hazard categories.

Learning Objectives: The learning objectives of NOS 3 focus on providing a comprehensive understanding of hazard identification and risk management, ensuring that learners can effectively apply these concepts in real-world scenarios. The key learning objectives include:

- **Hazard Identification:**

  o Understand the basic definitions and concepts of hazards, unsafe conditions, and incidents. Learn to differentiate between fatal and non-fatal incidents, as well as near-misses, and recognize the potential sources of hazards in various workplace settings.

- **Risk Assessment:**

  o Learn to categorize risks based on their potential impact and likelihood. Gain proficiency in applying control measures using the hierarchy of controls, which includes elimination, substitution, engineering controls, administrative controls, and personal protective equipment (PPE).

Performance Criteria: To effectively meet the standards of SSD/VSQ/N0114, learners are expected to demonstrate competency in the following areas:

- **Risks and objective of risk assessments**

  o Understand Risks, objectives of risk assessment, 5x5 risk matrix and risk ratings.

  o Understand HIRA and its statutory requirements.

  o Understand Likelihood and severity of hazard.

- **Hazard Identification and Risk Assessment (HIRA)**

  o Identify the persons vulnerable to the hazard.

  o Analyze the factors that can lead to an accident or endanger a persons life, likelihood and severity of the hazard.

  o Carry out risk assessment and prepare risk matrix.

  o Suggest corrective action in HIRA by following hierarchy of control.

- **Hierarchy and Process Safety**

  o Understand the role of management in an organization, role of safety supervisor, safety executive, safety officer, safety engineer and safety manager.

  o Understand fundamentals of process safety, OSHA standards. QRA, LOPA, SIL, FERA, EERA.

  o Understand the role of occupier, controller of premise, role and need of contractors in the organization and work permit to contractors, role of safety committee.

  o Understand the selection prerequisites of a contractor, management of contractors, review meetings, safety committee meetings, method statements, accident reporting, training programs, statutory inspections, permit to work, gaps in contractor safety implementation of contractor safety.

- **Case study**

  o Risk assessment analysis on HIRA, practical on 5 different scenarios

Assessment Criteria: The assessment for NOS 3 is divided into theoretical, practical components and project works, ensuring that learners are evaluated on both their understanding of risks and objective of risk assessments:

- **Theory (42 Marks):**

  o Assesses the learner's understanding of risks and the objectives of risk assessment, risk scoring & evaluation and hierarchy of process safety.

- **Practical (28 Marks):**

  o Evaluates the learner's ability to conduct comprehensive risk assessments, implement control measures, and monitor the effectiveness of these controls in real workplace scenarios.

- **Project (30 Marks):**
  - Project work on case study of any Risk Assessment Analysis on HIRA on different 5 scenarios.

7.4. NOS 4: Safety Audit Report Preparation (SSD/VSQ/N0115)

Overview: The National Occupational Standard (NOS) 4: Safety Audit Report Preparation (SSD/VSQ/N0115) is designed to provide the professional to understand the concept of an audit and inspection in an organization and prepare an audit report. Further it will help the professional in gathering valuable information before and after audit.

Scope: The scope of SSD/VSQ/N0115 includes the following key components:

- **Collect and analyze information for audit**
  - Encompasses the systematic gathering and evaluation of data to assess the effectiveness of safety measures within an organization.
  - By collecting and analyzing information from these various sources, safety auditors can identify areas of strength and weakness, provide recommendations for improvement, and help organizations enhance their overall safety performance.

- **Scrutinize documents for audit prerequisites**
  - Encompasses the thorough review and analysis of relevant documentation to ensure compliance with safety regulations, standards, and internal policies.
  - The goal of this scrutiny is to identify any discrepancies, deficiencies, or non-compliance issues that could potentially compromise safety.
  - By thoroughly examining these documents, auditors can assess the overall safety performance of the organization, identify areas for improvement, and provide recommendations to enhance safety measures.

- **Follow audit procedure as per IS 14489-1998**
  - Demonstrates a commitment to conducting thorough and professional audits that can help organizations improve their OSH performance.

- **Prepare an audit report**
  - Outlines the specific areas and elements that will be examined during the audit process. This ensures a comprehensive evaluation of an organization's safety practices and procedures.

Learning Objectives: The primary objective of NOS 4 is to provide a structured and comprehensive assessment of an organization's safety performance. This includes identifying potential hazards, assessing compliance with safety regulations, and recommending improvements to prevent accidents and injuries.

- **Understand the purpose of safety audit reports**: Learn how these reports contribute to overall safety management and risk reduction.

- **Develop a systematic approach to report writing:** Learn how to organize and structure a report effectively, including sections such as introduction, findings, conclusions, and recommendations.

- **Identify key elements of a comprehensive safety audit report**: Learn to include essential components such as audit scope, methodology, findings, and corrective actions.

- **Communicate findings clearly and concisely:** Learn how to present complex information in a way that is easily understandable to a variety of audiences, including management, employees, and regulatory bodies.

- **Prioritize recommendations based on risk and impact:** Learn how to evaluate the severity of identified hazards and prioritize corrective actions accordingly.

- **Use data and evidence to support findings:** Learn how to gather and analyze data to substantiate your conclusions and recommendations.

- **Understand the role of safety audit reports in continuous improvement:** Learn how these reports can be used to identify areas for improvement and track progress over time.

Performance Criteria: To meet the standards of SSD/VSQ/N0115 effectively, learners are expected to demonstrate competency in the following areas:

- **Safety Audit inspection scope and audit management**

    o Understand the inspection and Health and Safety Audit report, difference between safety audit and inspection.

    o Understand the scope of Health and Safety audit and management system.

    o Understand the audit elements Title, addresses, introduction, scope, identification of documents audited, management responsibilities, auditors' responsibility, reference to audit Standards, Opinions, Signature, Auditors address, Date of report.

- **Scrutiny of documents in safety audit**

    o Read & understand the Statement of Intent in the safety policy, Safety Culture in an organization and identify the positive Safety Culture indicators in an organization.

    o Learn information gathering from Legal compliance, absence and sickness data, Risk Assessments, SOP, Monitoring records, External & Internal communication medium, Maintenance records, Accident and Incident records, Health and Surveillance records, Safety committee minutes of meetings, Training records, Statutory Inspections, Previous audit reports.

    o Understanding the IS 14489:1998 – Code of practice on occupational safety and health audit.

- **Safety Audit data collection and report preparation**

    o Learn to prepare Safety Policy, Standard Operating Procedures,

Agenda, Minutes of Meetings and Safe Systems of Work

    o Conduct and record interviews for audits.

    o Gather data and information from compliance data, absence and sickness data, SOP, monitoring records, external & internal communication, maintenance records, accident and incident records, health and surveillance records, safety committee minutes of meetings, inspection reports, previous audit reports and other records.

    o Prepare the audit report as per IS 14489-1998. (Project)

Assessment Criteria: The assessment for NOS 4 is divided into theoretical, practical components and project, ensuring that learners are evaluated on both their understanding of safety audit report preparation and their ability to apply this knowledge in report preparation:

- **Theory (48 Marks):**

    o Assesses the learner's understanding of resource planning, communication strategies, and the principles of emergency protocols. This includes knowledge of setting up and maintaining effective emergency plans.

- **Practical (32 Marks):**

    o Evaluates the learner's ability to implement emergency protocols, such as setting up evacuation drills, coordinating with emergency services, and managing real-time emergency situations.

- **Project (20 Marks):**

    o Project work on preparation of sample audit report as per 14489-1998

7.5. NOS 5: Statutes and legislative requirements in Health and Safety (SSD//VSQ/N0131)

Overview: The National Occupational Standard (NOS) 5: Statutes and legislative requirements in Health and Safety (SSD//VSQ/N0131) is designed to describes the knowledge and skills of the professionals of regulations and regulatory compliance requirements as per the laws governed by the Government of India. The professional will be able to identify the shortcomings as per the recommendation of the regulatory body for a particular task or activity.

Scope: The scope of this NOS 5 is to understand & comply with statutory regulation related to occupation safety, health, and environment of the worksite.

Learning Objectives: The primary objective of learning about statutes and legislative requirements

in health and safety is to ensure that safety auditors are equipped to identify and assess compliance with

relevant laws and regulations. The key learning objectives include:

- **Understand the legal framework of health and safety:** Learn about the key statutes and regulations that govern workplace safety in the relevant jurisdiction.

- **Identify relevant laws and regulations:** Learn how to identify the specific laws and regulations that apply to different types of workplaces and industries.

- **Evaluate compliance with legal requirements:** Learn how to assess an organization's compliance with health and safety laws and regulations.

- **Understand the consequences of non-compliance:** Learn about the potential consequences of non-compliance with health and safety laws, including fines, penalties, and legal liability.

Performance Criteria: To effectively meet the standards of SSD/VSQ/N0131, learners are expected to demonstrate competency in the following areas:

- Apply regulatory obligations pertaining to safety, health, and environmental compliance in accordance with the BOCW Act of 1996.

- Apply regulatory obligations pertaining to safety, health & environment compliance as per Factories Act, 1948.

- Apply regulatory obligations pertaining to safety, health & environment compliance as per OSH Code 2020 & Occupational Safety & Health Administration (OSHA) compliance requirements.

- Apply regulatory obligations pertaining to Environment Protection Act, 1986 & ILO Guidelines related to EHS.

- Apply regulatory obligations pertaining to Oil Industry Safety Directorate (OSID) Guidelines.

- Apply regulatory obligations pertaining to Mines Vocational Training Rules – DGMS.

- Apply regulatory obligations pertaining to Electricity Act 2010 & 2003.

- Apply regulatory obligations pertaining to National Building Code (NBC) – 2016.

- Apply regulatory obligations pertaining to National Fire Protection Association regulations.

- Apply regulatory obligations pertaining to Petroleum & Explosive Safety Organization (PESO)Explosive Act 1884.

- Apply regulatory obligations pertaining to Gas Cylinders Rule 2016.

- Apply regulatory obligations pertaining to The Boilers Act 1923.

- Apply regulatory obligations pertaining to Workmen Compensation Act 1923 & Employee.

- State Insurance Act 1948 and related compliance.

- Apply regulatory obligations pertaining to Motor vehicle Act 1988

Assessment Criteria: The assessment for NOS 5 is divided into theoretical and practical components, ensuring that learners are evaluated on both their understanding of safety regulations and their ability to apply these regulations during safety audits:

- **Theory (60 Marks):**
  - Assesses the learner's understanding of key safety regulations, as well as the principles of regulatory compliance.

- **Practical (40 Marks):**
  - Evaluates the learner's ability to apply safety regulations in practical scenarios, such as conducting safety audits, implementing compliance measures, and responding to case studies that require regulatory application.

7.6. NOS 6: Plan, Organize & Monitor (SSD/VSQ/N0116)

Overview: The National Occupational Standard (NOS) 6: Plan, Organize & Monitor (SSD/VSQ/N0116) is designed to describes the knowledge & skills required by the professionals about planning, organizing, and monitoring of their work o provide the expected outcomes efficiently & ensuring quality of the work.

Scope: The scope covers the following:

- Planning of resources for own work and communication to concerned subordinates, co-workers, and superiors.

- Provide necessary support to subordinates, coordinate with co-workers and liaise with superiors and other teams.

- Monitor progress of work and adjust, manage, or project requirements on time.

Learning Objectives: The main objective of "Plan, Organize & Monitor" in safety auditor training is designed to equip auditors with the skills necessary to conduct effective and efficient safety audits. This involves planning the audit, organizing the audit process, and monitoring progress to ensure that the audit is completed thoroughly and on time.

Performance Criteria: To effectively meet the standards of SSD/VSQ/N0116, learners are expected to demonstrate competency in the following areas:

- **Planning of Work**
  - Plan the resources, schedules, and timelines as per work timelines given by superiors.
  - Understand hierarchy of the organization and communicate to concerned coworkers and superiors.
  - Task the subordinates as per task and timelines.

- **Organizing of Work**
  - Resource collection and provisioning.
  - Communicating to concerned coworkers and superiors.

- **Monitoring of Work**
  - Monitoring progress of work, management of resources, guidance to subordinates.
  - Reporting to superiors and keeping the other teams informed.
  - Documentations and compliances and report submission.

Assessment Criteria: The assessment for NOS 6 is divided into theoretical and practical components, ensuring that learners are evaluated on both their understanding of plan, organize & monitor of the work:

- **Theory (60 Marks):**
  - Assesses the learner's understanding on planning, organizing and monitoring the work, understand the hierarchy of the organization and communication.

- **Practical (40 Marks):**
  - Evaluates the learner's ability to apply the understanding of plan, organize & monitor the work in real life scenarios.

7.7. NOS 7: Employability Skills (DGT/VSQ/N0102)

Overview: The National Occupational Standard (NOS) 6: Employability Skills (DGT/VSQ/N0102) is designed to equip learners with a broad range of essential skills that are critical for success in any professional environment. This NOS covers key areas such as communication, financial literacy, digital skills, and teamwork, ensuring that individuals are well-prepared to navigate the demands of the modern workplace and advance their careers.

Scope: The scope of SSD/N0102 includes the following key components:

- **Basic Communication and Interpersonal Skills:**
  - Focuses on developing effective verbal and written communication skills, along with interpersonal skills that are crucial for collaboration and professional interactions.

- **Financial and Legal Literacy:**
  - Provides foundational knowledge of personal finance management, including understanding salary components, managing expenses, and conducting safe online transactions. It also covers basic legal rights related to employment.

- **Digital Literacy and Online Safety:**
  - Ensures learners are proficient in using digital tools, software, and online

platforms, while also emphasizing the importance of online safety and responsible digital behaviour.

- **Career Development and Goal Setting:**
  - Guides learners in understanding the distinction between a job and a career, and helps them develop the skills needed for career planning, goal setting, and professional growth.

Learning Objectives: The learning objectives of NOS 6 are focused on providing a comprehensive set of skills that are applicable across various professional environments. The key learning objectives include:

- **Communication Skills:**
  - Develop strong verbal and written communication skills that are essential for effective interaction in diverse

settings, including formal and informal workplace communication.

- **Financial Literacy:**
  - o Learn to manage personal finances effectively, understand the components of a salary slip, and conduct safe online financial transactions. This includes budgeting, saving, and making informed financial decisions.

- **Digital Skills:**
  - o Gain proficiency in using digital devices such as computers and smartphones, software applications like word processors and spreadsheets, and online platforms for communication and collaboration. Understand the importance of online safety and data protection.

- **Career Development:**
  - o Understand the difference between a job and a career, and learn how to set and achieve career goals. This includes the development of a professional résumé, preparing for job interviews, and engaging in continuous learning and skill development.

Performance Criteria: To effectively meet the standards of NOS 6, learners are expected to demonstrate competency in the following areas:

- **Demonstrate Effective Communication in the Workplace:**
  - o Show proficiency in both verbal and written communication, including the ability to articulate ideas clearly, listen actively, and engage in constructive dialogue.

- **Manage Personal Finances and Understand Legal Rights:**
  - o Demonstrate the ability to create a personal budget, manage expenses, and understand the financial and legal aspects of employment, including salary components and basic employee rights.

- **Use Digital Tools Efficiently for Work-Related Tasks:**
  - o Exhibit competence in using digital tools and software for tasks such as document creation, data management, and online communication. Ensure safe online practices and data security.

- **Develop a Professional Résumé and Prepare for Job Interviews:**
  - o Create a well-structured, professional résumé that highlights relevant skills and experiences. Prepare effectively for job interviews, demonstrating the ability to present oneself confidently and respond to questions appropriately.

Assessment Criteria: The assessment for NOS 6 is divided into theoretical and practical components, ensuring that learners are evaluated on both their understanding of employability concepts and their ability to apply these skills in real-life scenarios:

- **Theory (20 Marks):**
  - o Assesses the learner's understanding of key concepts such as financial literacy, digital skills, and career development. This includes knowledge of financial products, legal rights, and communication principles.

- **Practical (30 Marks):**
  - o Evaluates the learner's ability to apply employability skills in practical scenarios, such as preparing a professional résumé, conducting a mock job interview, and using digital tools for workplace tasks.

Employability Skills (DGT/VSQ/N0102) provides a comprehensive foundation for developing the essential skills needed to thrive in any professional environment. By focusing on communication, financial literacy, digital proficiency, and career development, this NOS ensures that learners are well-prepared to meet the demands of the modern workplace, advance their careers, and achieve long-term professional success. Adhering to this standard not only enhances individual employability but also contributes to a more skilled and capable workforce.

8. Chapter 1: Introduction to Safety Auditing

8.1. Element 1: Foundation of Safety Auditing

Introduction: In today's complex industrial and commercial environments, ensuring the safety, health, and well-being of employees, contractors, and the general public is paramount. Safety audits serve as a critical tool in identifying

potential hazards, assessing risk levels, and implementing preventive measures to mitigate accidents and injuries. This handbook is designed to provide a comprehensive training resource for safety auditors across various industries. It covers fundamental concepts, practical techniques, and essential knowledge required to conduct effective safety audits, ensuring safe and compliant work environments.

1. **Understanding Safety Auditing**

1.1 Definition:

Safety auditing is a systematic examination of an organization's safety performance to identify hazards, assess compliance with regulations, and recommend improvements. It's a proactive approach to preventing accidents, injuries, and illnesses by identifying and addressing potential risks.

1.2 Purpose: The primary purpose of safety auditing is to:

- **Identify hazards:** Pinpoint potential dangers that could lead to accidents or injuries.

- **Assess compliance:** Evaluate an organization's adherence to safety regulations and standards.

- **Prevent accidents:** Take proactive measures to eliminate or mitigate hazards and prevent accidents before they occur.

- **Protect employees:** Safeguard the health and well-being of employees.

- **Improve efficiency:** Enhance operational efficiency by reducing downtime and costs associated with accidents.

- **Enhance reputation:** Build a positive reputation by demonstrating a commitment to safety.

- **Meet regulatory requirements:** Comply with legal obligations and avoid penalties.

1.3 Types of Safety Audits: There are three main types of safety audits:

- **Internal Audits:** Conducted by an organization's own personnel. These audits are often part of an internal safety management system.

- **External Audits:** Performed by independent auditors who are not affiliated with the organization. These audits provide an objective evaluation of safety performance.

- **Regulatory Audits:** Conducted by government agencies to ensure compliance with safety regulations. These audits can result in fines or penalties if non-compliance is found.

2. **The Role of Safety Auditors**

Safety auditors play a crucial role in ensuring a safe and healthy work environment. Their responsibilities include:

- **Identifying safety hazards:** Pinpointing potential dangers and assessing their risks.

- **Evaluating compliance:** Assessing an organization's adherence to safety regulations and standards.

- **Recommending improvements:** Proposing practical and effective solutions to address safety issues.

- **Providing objective assessments:** Offering unbiased and independent evaluations of an organization's safety performance.

3. **Benefits of Safety Auditing:**

Regular safety audits can provide numerous benefits to an organization, including:

- **Reduced accidents and injuries:** Lowering the frequency and severity of workplace accidents.

- **Improved employee morale:** Enhancing employee morale and job satisfaction.

- **Enhanced productivity:** Increasing productivity by reducing downtime due to accidents.

- **Cost savings:** Reducing costs associated with accidents, insurance premiums, and legal expenses.

- **Improved reputation:** Building a positive reputation as a responsible and safety-conscious organization.

- **Legal compliance:** Ensuring compliance with safety regulations and avoiding penalties.

4. **Concept of Safety Audit:**

The key components of a safety audit are

- **Hazard Identification:**

  o Identifying potential dangers that could lead to accidents or injuries.

  o Assessing the likelihood and severity of these hazards.

  o Prioritizing risks based on their potential impact.

- **Compliance Assessment:**

- o Evaluating an organization's adherence to safety regulations and standards.
- o Identifying areas of non-compliance and assessing their severity.
- o Understanding the legal implications of non-compliance.

- **Risk Assessment:**
  - o Quantifying the likelihood and severity of identified hazards.
  - o Determining the overall risk level associated with each hazard.
  - o Prioritizing risks based on their overall risk level.

- **Recommendation Development:**
  - o Proposing practical and effective solutions to address identified hazards and non-compliance issues.
  - o Considering the feasibility and cost-effectiveness of recommendations.
  - o Prioritizing recommendations based on their potential impact and urgency.

- **Reporting and Follow-Up:**
  - o Documenting audit findings and recommendations in a clear and concise report.
  - o Communicating the audit findings to relevant stakeholders.
  - o Monitoring the implementation of recommendations and conducting follow-up audits to assess their effectiveness.

5. **Objectives of Safety Audits:**

- **Prevent accidents:** Identify and address potential hazards to prevent accidents before they occur.
- **Protect employees:** Safeguard the health and well-being of employees.
- **Improve efficiency:** Enhance operational efficiency by reducing downtime and costs associated with accidents.
- **Enhance reputation:** Build a positive reputation by demonstrating a commitment to safety.
- **Meet regulatory requirements:** Comply with legal obligations and avoid penalties.

6. **Importance of Safety Audits:**

Safety audits are a critical component of any effective safety management system. They provide a structured and systematic way to assess an organization's safety performance, identify potential hazards, and recommend improvements. Here are some of the key benefits of conducting safety audits:

- **Identify hazards:** Audits help to identify potential hazards that could lead to accidents or injuries.
- **Assess compliance:** Audits can assess an organization's compliance with safety regulations and standards.
- **Prevent accidents:** By identifying and addressing hazards, audits can help to prevent accidents and injuries.
- **Improve safety culture:** Audits can help to create a strong safety culture within an organization.
- **Reduce costs:** Accidents can be costly, both in terms of financial losses and human suffering. Audits can help to reduce the costs associated with accidents.
- **Enhance reputation:** A strong safety record can enhance an organization's reputation.

7. **The Concept of "Window Dressing"**

"Window dressing" is a term used to describe the practice of making an organization appear to be safer than it actually is. This can involve hiding safety problems or taking superficial steps to improve safety without addressing the underlying issues. Window dressing can be a serious problem, as it can mask real safety hazards and increase the risk of accidents. It is important for safety auditors to be able to identify and address window dressing practices.

8. **Responsibilities of a Safety Auditor**

Safety auditors have a number of important responsibilities, including:

- **Conducting audits:** Safety auditors conduct audits to assess an organization's safety performance.
- **Identifying hazards:** Auditors identify potential hazards that could lead to accidents or injuries.
- **Assessing compliance:** Auditors assess an organization's compliance with safety regulations and standards.
- **Recommending improvements:** Auditors recommend improvements to address safety hazards and improve safety performance.

- **Reporting findings:** Auditors report their findings to management and other stakeholders.
- **Following up on recommendations:** Auditors follow up on recommendations to ensure that they are implemented effectively.

Safety Audit Techniques

Safety audits involve a variety of techniques to gather information, assess compliance, and identify potential hazards. Here's a breakdown of some common techniques:

Vouching

- Examining supporting documentation or events to verify their accuracy and completeness.
- Ensures that records and safety-related activities are supported by valid evidence.

  E.g.: Verifying that safety training records are accurate by checking attendance sheets, training materials, and evaluation forms.

Confirmation

- Obtaining written or electronic confirmation from external parties to verify information.
- Provides independent verification of data and helps to identify discrepancies or inconsistencies.

  E.g.: Sending confirmation letters to suppliers to verify the accuracy of safety equipment purchase orders and invoices.

Reconciliation

- Comparing two sets of related data to identify any differences or discrepancies.
- Ensures the accuracy and consistency of financial records and safety-related data.

  E.g.: Reconciling the number of safety equipment items on the inventory list with the physical count of items in storage.

Testing

- Conducting tests or simulations to evaluate the effectiveness of safety controls or procedures.
- Identifies weaknesses in safety systems and measures their ability to prevent accidents.

  E.g.: Conducting a fire drill to test the effectiveness of emergency evacuation procedures.

Analysis

- Examining data and information to identify trends, patterns, or anomalies.
- Helps to identify potential safety hazards and areas for improvement.

  E.g.: Analysing accident data to identify common causes and trends.

Scanning

- Reviewing documents or records for specific information or indicators of safety hazards.
- Helps to identify potential safety issues quickly and efficiently.

  E.g.: Scanning safety inspection reports for recurring non-conformities.

Inquiry

- Asking questions of employees, managers, or other stakeholders to gather information and verify data.
- Provides firsthand information about safety practices and identifies potential hazards.

  E.g.: Interviewing employees to assess their understanding of safety procedures and their perception of the workplace safety culture.

Verification Posting

- Verifying that transactions or events have been recorded accurately in relevant records or databases.
- Ensures the accuracy and completeness of safety-related data.

  E.g.: Verifying that safety training records have been posted correctly in the employee's personnel file.

Flowcharting

- Creating a visual representation of a process or system to identify potential weaknesses or inefficiencies.
- Helps to understand the flow of work and identify areas for improvement.

  E.g.: Creating a flowchart of the emergency response procedures to identify potential bottlenecks or gaps in the process.

Observations

- Observing workplace activities to identify potential hazards and assess compliance with safety standards.

- Provides firsthand information about safety practices and identifies potential hazards.

  E.g.: Observing employees working on machinery to identify potential hazards and assess their compliance with safety procedures.

These techniques are often used in combination to provide a comprehensive assessment of an organization's safety performance.

8.2. Element 2: Safety Audit Process and Stages

Introduction: Safety is a fundamental right of every employee. A safe and healthy work environment is essential for the well-being of individuals, the productivity of organizations, and the overall economic prosperity of a nation. Safety audits play a crucial role in ensuring that organizations are taking proactive measures to protect the safety of their employees.

8.2.1.   Planning and Preparation

The planning and preparation stage of a safety audit is crucial for ensuring a successful and effective audit. It involves defining the scope and objectives of the audit, engaging stakeholders, allocating resources, and developing a detailed audit plan.

- **Scope Definition:**
  - Determine the Purpose: Clearly define the reason for conducting the audit, such as identifying hazards, assessing compliance, or evaluating safety performance.
  - Identify the Scope: Specify the specific areas or departments to be included in the audit.
  - Set Objectives: Establish clear and measurable goals for the audit, such as identifying a certain number of hazards or assessing compliance with specific regulations.

- **Stakeholder Engagement:**
  - Identify Key Stakeholders: Identify all relevant stakeholders, including management, employees, safety professionals, and regulatory authorities.
  - Communicate the Audit Purpose: Clearly communicate the purpose and objectives of the audit to all stakeholders.
  - Obtain Support: Seek support and cooperation from key stakeholders to ensure the success of the audit.

- **Resource Allocation:**
  - Determine the Necessary Resources: Identify the resources required to conduct the audit, such as personnel, equipment, and time.
  - Allocate Resources: Allocate resources effectively to ensure that the audit can be conducted efficiently and effectively.

- **Audit Planning:**
  - Develop a Detailed Plan: Create a comprehensive audit plan that outlines the audit methodology, timeline, and deliverables.
  - Consider Relevant Standards: Review relevant safety standards and regulations to ensure that the audit covers all necessary areas.
  - Identify Audit Techniques: Select appropriate audit techniques, such as interviews, observations, document reviews, and inspections.

8.2.2.   Conducting the Audit:

This stage is a critical phase of the overall safety audit process. It involves gathering data, identifying hazards, assessing compliance, and conducting various assessments to evaluate the organization's safety performance.

- **Data Collection:** Gather information through various techniques, such as interviews, observations, document reviews, and inspections.
  - **Document Review:** Examine relevant documents, such as safety policies, procedures, training records, and accident reports.
  - **Interviews and Surveys:** Conduct interviews with employees, managers, and other stakeholders to gather information about safety practices and concerns.
  - **Observations:** Observe workplace activities to identify potential hazards and assess compliance with safety standards.
  - **Inspections:** Conduct detailed inspections of equipment, facilities,

and work areas to identify safety hazards.

- **Hazard Identification:** Identify potential hazards and assess their severity.

  - **Identify potential hazards:** Use various techniques, such as hazard identification checklists, job safety analysis, and hazard and operability studies (HAZOP), to identify potential hazards.

  - **Assess the severity and likelihood of hazards:** Evaluate the potential consequences of each hazard and the likelihood of it occurring.

  - **Prioritize hazards:** Rank hazards based on their risk level (severity and likelihood) to focus on the most critical issues.

- **Compliance Assessment:** Evaluate the organization's adherence to safety regulations and standards.

  - **Evaluate adherence to regulations:** Assess the organization's compliance with relevant safety regulations, standards, and industry best practices.

  - **Identify non-conformities:** Document any deviations from safety requirements.

  - **Gather evidence:** Collect supporting evidence to substantiate findings.

- **Risk Assessment:** Quantify the likelihood and severity of identified risks.

  - Quantify risks: Use risk assessment techniques, such as risk matrices or failure mode and effects analysis (FMEA), to quantify the likelihood and severity of identified hazards.

o   Prioritize risks: Rank risks based on their overall risk level to focus on the most critical issues.

8.2.3.   Analysis and Findings:

Audit analysis is the process of examining collected data and information to identify trends, patterns, and areas of concern. It involves evaluating the evidence gathered during the audit to draw meaningful conclusions about an organization's safety performance. Key Steps in Audit Analysis are:

- **Data Review:**

  - Review all collected data, including interview transcripts, observation notes, document reviews, and inspection findings.

  - Identify any inconsistencies or discrepancies in the data.

- **Data Analysis:**

  - Use appropriate analytical techniques, such as statistical analysis, trend analysis, and root cause analysis, to identify patterns and trends in the data.

  - Look for recurring issues, common safety hazards, and areas of non-compliance.

- **Correlation Analysis:**

  - Examine the relationships between different factors to identify potential causal relationships.

  - For example, analyze the relationship between employee training and accident rates.

- **Risk Assessment:**

  - Evaluate the likelihood and severity of identified hazards.

  - Prioritize risks based on their potential impact.

- **Root Cause Analysis:** Investigate the underlying causes of identified issues.

- **Comparison with Standards:**

  - Compare the findings of the audit to relevant safety standards and regulations.

  - Identify areas of non-compliance and assess their severity.

- **Types of Findings:**

  - **Non-conformities:** Deviations from safety regulations, standards, or established procedures.

  - **Safety hazards:** Potential dangers that could lead to accidents or injuries.

  - **Areas for improvement:** Opportunities to enhance safety performance and reduce risks.

  - **Best practices:** Examples of effective safety practices that can be adopted by the organization.

- **Documenting Findings:**

  - Clearly and concisely document all findings.

  - Provide supporting evidence for each finding.

- o Use a consistent format for documenting findings.

- **Examples of Audit Findings:**

  - o **Non-conformity:** Failure to provide adequate safety training to employees.

  - o **Safety hazard:** Unguarded machinery that could cause injuries.

  - o **Area for improvement:** Lack of a formal emergency response plan.

  - o **Best practice:** Implementing a safety management system to improve overall safety performance.

8.2.4.   Recommendations:

Audit recommendations are the proposed solutions or actions that an organization should take to address the identified safety hazards, non-conformities, or areas for improvement. They are typically based on the findings of the audit and should be practical, feasible, and effective.

- **Key Considerations for Developing Recommendations:**

  - o **Relevance:** Ensure that recommendations are directly related to the identified issues and address the root causes.

  - o **Feasibility:** Consider the organization's resources, budget, and capabilities when developing recommendations.

  - o **Prioritization:** Rank recommendations based on their severity, potential impact, and cost-effectiveness.

  - o **Measurability:** Ensure that recommendations are measurable so that progress can be tracked.

  - o **Timeliness:** Set realistic timelines for implementing recommendations.

  - o **Alignment with Goals:** Ensure that recommendations align with the organization's overall safety goals and objectives.

- **Types of Recommendations:**

  - o Corrective Actions: Immediate steps to address non-conformities or safety hazards.

  - o Preventive Actions: Measures to prevent future occurrences of similar issues.

- **Improvement Recommendations:** Suggestions for enhancing safety performance beyond compliance.

- **Example Recommendations:**

  - o **Corrective Action:** "Implement a new safety training program for all employees to address the identified gaps in knowledge and skills."

  - o **Preventive Action:** "Install additional safety guards on machinery to prevent accidents."

  - o **Improvement Recommendation:** "Conduct regular safety inspections to identify potential hazards early."

- **Effective Recommendation Writing:**

  - o **Clarity:** Use clear and concise language.

  - o **Specificity:** Provide specific details about the recommended action.

  - o **Measurability:** Define measurable outcomes or targets.

  - o **Feasibility:** Consider the organization's resources and capabilities.

  - o **Prioritization:** Rank recommendations based on their importance and urgency.

- **Developing Recommendations:** Propose practical and effective solutions to address identified problems

- **Prioritizing Recommendations:** Rank recommendations based on their severity and potential impact.

8.2.5.   Reporting:

The reporting stage of a safety audit is crucial for communicating the findings, recommendations, and overall assessment of an organization's safety performance. A well-structured and informative report can help to drive improvements and ensure that the audit's objectives are met.

- **Key Components of a Safety Audit Report:**

  - o **Executive Summary:**

    - ▪ A concise overview of the audit's key findings, recommendations, and conclusions.

    - ▪ Should be written for a general audience and provide a snapshot of the audit's results.

- o **Introduction:**
  - A brief overview of the audit's purpose, scope, and methodology.
  - Should include information about the organization, the audit team, and the timeframe of the audit.
- o **Findings and Observations:**
  - A detailed description of the audit findings, including any non-conformities, hazards, or areas for improvement.
  - Should be supported by evidence, such as photographs, documents, or interview transcripts.
- o **Recommendations:**
  - A list of specific recommendations to address the identified issues.
  - Should be prioritized based on their severity and potential impact.
  - Each recommendation should include a clear action plan and timeline for implementation.
- o **Conclusions:**
  - A summary of the overall assessment of the organization's safety performance.
  - Should highlight any significant strengths or weaknesses identified during the audit.
- o **Appendices:** Any supporting documentation, such as raw data, detailed findings, or references.

8.2.6.   Follow-up:

Follow-up audits are a critical component of a comprehensive safety management system. They are conducted to assess the effectiveness of corrective actions implemented in response to previous audit findings and to identify any new safety issues that may have arisen.

- • **Purpose of Follow-Up Audits:**
  - o **Verify Corrective Actions:** Ensure that recommended corrective actions have been implemented effectively and are producing the desired results.
  - o **Identify Recurring Issues:** Detect any recurring safety problems that may require additional attention.
  - o **Monitor Progress:** Track the progress of safety improvement initiatives and identify areas where further action is needed.
  - o **Demonstrate Commitment:** Show commitment to safety by following up on audit findings and implementing necessary changes.
- • **Key Elements of Follow-Up Audits:**
  - o **Review of Corrective Actions:** Verify that the recommended corrective actions have been implemented as planned and on time.
  - o **Assessment of Effectiveness:** Evaluate the effectiveness of the corrective actions in addressing the identified safety issues.
  - o **Identification of New Hazards:** Identify any new safety hazards that may have emerged since the previous audit.
  - o **Evaluation of Safety Culture:** Assess the organization's safety culture and identify areas for improvement.
  - o **Documentation:** Document the findings of the follow-up audit and any additional recommendations.
- • **Best Practices for Follow-Up Audits:**
  - o **Schedule Regular Follow-Ups:** Conduct follow-up audits at appropriate intervals to monitor progress and identify emerging issues.
  - o **Involve Key Stakeholders:** Involve relevant stakeholders, such as management, employees, and safety professionals, in the follow-up audit process.
  - o **Use Consistent Methodology:** Use a consistent approach to conducting follow-up audits to ensure comparability and identify trends.
  - o **Document Findings Thoroughly:** Document all findings and recommendations in detail to provide a clear record of the audit process.

- o **Communicate Results Effectively:** Share the results of the follow-up audit with relevant stakeholders to ensure

that they are aware of any ongoing safety issues and the actions being taken to address them.

8.3. Element 3: Types and Scope of Audit

Introduction: Understanding the different types and scopes of safety audits is essential for ensuring that an organization's safety program is effective and comprehensive. By selecting the appropriate type and scope of audit, organizations can identify specific safety risks through tailoring the audit to address the unique safety challenges faced by the organization. Ensure compliance with regulations, prioritize safety initiatives by focusing on the most critical safety issues and allocate resources accordingly.

8.3.1. Types of Safety Audit

Safety audits can be classified into various types based on their scope, purpose, and the entity conducting them. Here's a breakdown of some common types:

- **Internal Audits**
  - o **Conducted by:** Organization's own employees.
  - o **Purpose:** Assess safety performance, identify hazards, and ensure compliance with internal policies and regulations.
  - o **Benefits:** Cost-effective, can be tailored to specific needs, and can improve internal safety culture.
  - o **Challenges:** May lack objectivity and can be influenced by internal pressures.
- **External Audits**
  - o **Conducted by:** Independent third-party auditors.
  - o **Purpose:** Provide an objective evaluation of safety performance, identify potential risks, and ensure compliance with external standards.
  - o **Benefits:** Objective assessment, credibility, and can identify areas for improvement that may be overlooked by internal audits.
  - o **Challenges:** Can be more expensive, may require more time to schedule, and may not be as familiar with the organization's specific operations.
- **Regulatory Audits**
  - o **Conducted by:** Government agencies or regulatory bodies.
  - o **Purpose:** Ensure compliance with safety regulations and laws.
  - o **Benefits:** Can identify serious non-compliance issues and may result in penalties or fines.

- o **Challenges:** Can be rigorous and time-consuming and may require significant resources to address any identified deficiencies.
- **Specialized Audits**
  - o **Conducted by:** Auditors with expertise in specific areas of safety.
  - o **Purpose:** Assess safety performance in specialized areas, such as environmental safety, fire safety, or machine safety.
  - o **Benefits:** Provides in-depth analysis of specific safety risks and can help organizations meet specialized regulatory requirements.
  - o **Challenges:** May require specialized expertise and can be more expensive than general safety audits.

Safety audits can be classified based on the entity conducting them. Here's a breakdown of the three primary types:

- **1st Party Audits**
  - o **Conducted by:** The organization itself.
  - o **Purpose:** Assess internal safety performance, identify hazards, and ensure compliance with internal policies and regulations.
  - o **Benefits:** Cost-effective, can be tailored to specific needs, and can improve internal safety culture.
  - o **Challenges:** May lack objectivity and can be influenced by internal pressures.
- **2nd Party Audits**
  - o **Conducted by:** A party that has a relationship with the organization, such

as a customer, supplier, or regulatory body.

- o **Purpose:** Assess the organization's safety performance to ensure that it meets specific requirements or standards.
- o **Benefits:** Can provide an independent evaluation and help to build trust with stakeholders.
- o **Challenges:** May be influenced by the relationship between the parties and may not be as comprehensive as a 3rd party audit.

- **3rd Party Audits**
  - o **Conducted by:** An independent third-party organization with no affiliation to the organization being audited.
  - o **Purpose:** Provide an objective and impartial assessment of safety performance, identify hazards, and ensure compliance with external standards.
  - o **Benefits:** Highly credible, can identify areas for improvement that may be overlooked by internal or 2nd party audits, and can help build trust with stakeholders.
  - o **Challenges:** Can be more expensive and time-consuming than internal or 2nd party audits.

- **Key differences:**

Feature	1st Party Audit	2nd Party Audit	3rd Party Audit
Conducted by	Organization itself	Related party	Independent third party
Purpose	Internal assessment, compliance	Assess compliance with specific requirements	Objective evaluation, external validation
Benefits	Cost-effective, tailored	Builds trust with stakeholders	Credible, independent
Challenges	Lack of objectivity	Potential for bias	More expensive, time-consuming

- **Compliance Audits:**
  - o **Purpose:** To assess an organization's adherence to safety regulations, standards, and legal requirements.
  - o **Scope:** Typically focuses on specific requirements, such as:
    - Safety policies and procedures

- Emergency response plans
- Training and education programs
- Hazard identification and risk assessment
- Incident investigation procedures
- Equipment maintenance and inspection
- Personal protective equipment (PPE) requirements

- **Program Audits:**
  - o **Purpose:** To evaluate the effectiveness of specific safety programs or initiatives.
  - o **Scope:** Typically focuses on:
    - Program objectives and goals
    - Implementation strategies
    - Resource allocation
    - Performance metrics
    - Effectiveness in achieving desired outcomes

- **Management System Audits**
  - o **Purpose:** To assess the overall effectiveness of an organization's safety management system.
  - o **Scope:** Typically includes:
    - Safety policy and commitment
    - Planning and organization
    - Implementation and operation
    - Checking and corrective action
    - Management review

- **Other Types of Audits**
  - o **Incident Investigation Audits:** Conducted to investigate specific accidents or incidents and identify root causes.
  - o **Compliance Audits:** Focus specifically on ensuring compliance with safety regulations and standards.

- o **Risk Assessment Audits:** Evaluate an organization's risk management processes and identify potential hazards.
- o **Safety Culture Audits:** Assess the organization's safety culture and identify areas for improvement.

The choice of audit type depends on the organization's specific needs, industry, and regulatory requirements. A combination of different audit types may be necessary to provide a comprehensive assessment of safety performance.

8.3.2. Scope of Audit

The scope of a safety audit refers to the specific areas or activities that will be examined during the audit. It determines the depth and breadth of the audit and influences the resources required and the findings that can be expected.

Key Areas included in Safety Audits:

- **Hazard Identification:**
  - o Identifying potential hazards that could lead to accidents or injuries.
  - o Assessing the severity and likelihood of these hazards.
  - o Prioritizing risks based on their potential impact.
- **Compliance Assessment:**
  - o Evaluating the organization's adherence to safety regulations and standards.
  - o Identifying areas of non-compliance and assessing their severity.
  - o Understanding the legal implications of non-compliance.
- **Risk Management:**
  - o Assessing the organization's risk management processes and procedures.
  - o Evaluating the effectiveness of risk assessment and control measures.

- o Identifying areas for improvement in risk management.
- **Safety Training and Education:**
  - o Assessing the adequacy and effectiveness of safety training programs.
  - o Evaluating employee understanding and compliance with safety procedures.
  - o Identifying training gaps and recommending improvements.
- **Emergency Preparedness:**
  - o Assessing the organization's preparedness for emergencies, such as fires, natural disasters, or chemical spills.
  - o Evaluating the effectiveness of emergency response plans and procedures.
  - o Identifying areas for improvement in emergency preparedness.
- **Safety Culture:**
  - o Assessing the organization's safety culture, including employee attitudes, behaviours, and commitment to safety.
  - o Identifying areas for improvement in safety culture.
- **Incident Investigation:**
  - o Reviewing past accidents and incidents to identify root causes and prevent recurrence.
  - o Assessing the effectiveness of incident investigation procedures.
- **Safety Management Systems:**
  - o Evaluating the effectiveness of the organization's safety management system, including policies, procedures, and documentation.
  - o Identifying areas for improvement in the safety management system.

8.4. Element 4: PDCA Cycle for Safety Audit Process

Introduction: The PDCA cycle, a continuous improvement model, provides a structured framework for conducting safety audits and ensuring ongoing safety performance. PDCA stands for:

- **Plan:** Define the scope, objectives, and methodology of the audit.
- **Do:** Conduct the audit and collect data.

- **Check:** Analyze findings, evaluate corrective actions, and identify new hazards.

- **Act:** Implement recommendations and monitor progress.

By following the PDCA cycle, organizations can conduct more effective safety audits and continuously improve their safety management systems.

8.4.1. Plan

- **Define the scope and objectives of the audit:** Clearly outline the specific areas to be examined such as hazard identification, compliance assessment, risk management, or emergency preparedness and the desired outcomes.

- **Develop an audit plan:** Create a detailed plan outlining the audit methodology, timeline, resources required, and responsibilities of team members.

- **Identify key stakeholders:** Involve relevant personnel, such as management, employees, safety professionals, and regulatory authorities, in the audit process.

8.4.2. Do

- **Conduct the audit:** Execute the audit plan, collecting data through interviews, observations, document reviews, and inspections.

- **Analyze findings:** Identify hazards, assess compliance with regulations and standards, and evaluate the effectiveness of safety programs.

- **Develop recommendations:** Propose practical solutions to address identified issues, considering their feasibility, cost-effectiveness, and potential impact.

8.4.3. Check

- **Review audit findings and recommendations:** Ensure accuracy and completeness of the findings and recommendations.

- **Evaluate the effectiveness of corrective actions:** Assess whether implemented changes have addressed identified issues and improved safety performance.

- **Identify any new hazards or risks:** Continuously monitor the safety environment for emerging hazards or changes in risks.

8.4.4. Act

- **Implement corrective actions:** Take necessary steps to address identified hazards and non-compliances, following the recommendations developed in the previous stage.

- **Monitor progress:** Track the effectiveness of implemented changes and identify any areas where further action may be required.

- **Update safety management system:** Incorporate new knowledge and insights into the organization's safety procedures, policies and practices.

8.4.5. Benefits of using the PDCA cycle for Safety Audits:

- **Continuous improvement:** Ensures ongoing improvement in safety performance.

- **Structured approach:** Provides a clear framework for conducting audits.

- **Efficiency:** Streamlines the audit process and reduces the likelihood of errors.

- **Effectiveness:** Helps to identify and address root causes of safety issues.

- **Accountability:** Promotes accountability for safety performance.

8.4.6. Case Studies: Safety Audit for various industries

Case Study1: Construction Safety Audit

Scenario: A large construction site for a new commercial building has been experiencing a higher-than-average rate of accidents, including falls, slips, and equipment-related injuries.

Safety Audit Focus:

- **Fall Protection:** Inspecting scaffolding, ladders, and roof edges for proper guarding and safety measures.

- **Material Handling:** Assessing the safe storage and transport of heavy materials.

- **Electrical Safety:** Checking for proper wiring, grounding, and the use of GFCI outlets.

- **Emergency Procedures:** Evaluating the site's emergency response plan, including fire exits, evacuation routes, and first-aid kits.

- **Personal Protective Equipment (PPE):** Ensuring workers are using appropriate PPE, such as hard hats, safety glasses, and gloves.

Potential Findings and Recommendations:

- **Inadequate Fall Protection:** Implement stricter fall protection protocols, including the use of safety harnesses and guardrails.

- **Poor Material Handling:** Train workers on proper lifting techniques and use mechanical lifting equipment when necessary.

- **Electrical Hazards:** Conduct regular electrical inspections and ensure proper maintenance of equipment.

- **Ineffective Emergency Procedures:** Develop a comprehensive emergency response plan and conduct regular drills.

- **PPE Compliance:** Enforce strict PPE policies and provide regular training on proper usage.

Case Study 2: Manufacturing Plant Safety Audit

Scenario: A manufacturing plant producing automotive parts has a history of machine-related accidents and chemical exposure incidents.

Safety Audit Focus:

- **Machine Guarding:** Inspecting machinery for adequate guarding and safety interlocks.

- **Lockout/Tagout Procedures:** Assessing the implementation of lockout/tagout procedures during maintenance and repair.

- **Chemical Safety:** Evaluating the handling, storage, and disposal of hazardous chemicals.

- **Ventilation:** Checking ventilation systems for effectiveness in removing harmful fumes and dust.

- **Ergonomics:** Assessing workstation design and employee posture to prevent musculoskeletal disorders.

Potential Findings and Recommendations:

- **Machine Guarding Deficiencies:** Install proper guards and safety interlocks on all hazardous machinery.

- **Lockout/Tagout Violations:** Enforce strict lockout/tagout procedures and provide regular training.

- **Chemical Safety Issues:** Implement a comprehensive chemical hygiene plan, including proper labeling, storage, and emergency procedures.

- **Poor Ventilation:** Improve ventilation systems to ensure adequate air quality.

- **Ergonomic Risks:** Conduct ergonomic assessments and implement corrective measures, such as adjustable workstations and ergonomic chairs.

Case Study 3: Office Building Safety Audit

Scenario: An office building in a high-rise complex has concerns about fire safety and emergency evacuation procedures.

Safety Audit Focus:

- **Fire Safety Systems:** Inspecting fire alarms, sprinkler systems, and fire extinguishers.

- **Emergency Exits:** Checking the accessibility and signage of emergency exits.

- **Evacuation Procedures:** Evaluating the effectiveness of the building's evacuation plan and conducting fire drills.

- **Electrical Safety:** Assessing electrical wiring, outlets, and equipment for potential hazards.

- **Hazardous Materials:** Identifying and properly storing any hazardous materials in the building.

Potential Findings and Recommendations:

- **Fire Safety System Deficiencies:** Conduct regular maintenance and testing of fire safety systems.

- **Inadequate Emergency Exits:** Clear obstructions and improve signage for emergency exits.

- **Ineffective Evacuation Procedures:** Develop a comprehensive evacuation plan and conduct regular drills.

- **Electrical Hazards:** Replace faulty wiring and outlets and conduct regular electrical inspections.

- **Improper Hazardous Material Storage:** Implement proper storage and handling procedures for hazardous materials.

Case Study 4: Offshore Drilling Rig Safety Audit

Scenario: An offshore drilling rig in the Gulf of Mexico has experienced a series of minor incidents, including equipment failures and near-misses.

Safety Audit Focus:

- **Emergency Response Procedures:**
  Evaluate the rig's emergency response plan, including evacuation procedures, firefighting capabilities, and medical response.

- **Equipment Inspection and Maintenance:**
  Inspect critical equipment, such as drilling rigs, cranes, and lifeboats, to ensure they are in good working condition and maintained according to schedule.

- **Personal Protective Equipment (PPE):**
  Verify that all personnel are using appropriate PPE, including safety helmets, life jackets, and flame-resistant clothing.

- **Confined Space Entry Procedures:** Assess the rig's procedures for entering confined spaces, such as tanks and vessels, to ensure they comply with industry standards.

- **Human Factors and Fatigue Management:**
  Evaluate the crew's work schedules, fatigue management practices, and human factors training to mitigate risks associated with fatigue and human error.

Potential Findings and Recommendations:

- **Inadequate Emergency Response Training:** Conduct regular emergency drills and provide comprehensive training to all personnel.

- **Equipment Maintenance Overdue:**
  Implement a rigorous equipment maintenance program and ensure timely inspections and repairs.

- **PPE Compliance Issues:** Enforce strict PPE policies and provide regular training on proper usage.

- **Confined Space Entry Deficiencies:**
  Develop and implement detailed confined space entry procedures, including gas testing, ventilation, and emergency rescue plans.

- **Fatigue Management Issues:** Implement effective fatigue management strategies, such as adequate rest periods and rotation schedules.

Case Study 5: Onshore Refinery Safety Audit

Scenario: An onshore refinery has experienced a series of process safety incidents, including leaks and minor fires.

Safety Audit Focus:

- **Process Safety Management (PSM):**
  Evaluate the refinery's PSM program,

including hazard identification, risk assessment, and management of change procedures.

- **Fire Protection Systems:** Inspect fire protection systems, such as fire water systems, sprinkler systems, and fire hydrants, to ensure they are in good working condition.

- **Emergency Shutdown Systems (ESD):**
  Assess the reliability and effectiveness of the refinery's ESD systems.

- **Hot Work Permits:** Verify that hot work permits are issued and followed correctly, including proper isolation and purging procedures.

- **Contractor Safety:** Evaluate the safety performance of contractors working at the refinery and ensure they comply with the refinery's safety standards.

Potential Findings and Recommendations:

- **PSM Program Weaknesses:** Strengthen the PSM program by conducting regular hazard identification and risk assessments, and implementing effective management of change procedures.

- **Fire Protection System Deficiencies:**
  Conduct regular maintenance and testing of fire protection systems.

- **ESD System Reliability Issues:** Improve the reliability of ESD systems through regular testing and maintenance.

- **Hot Work Permit Violations:** Enforce strict hot work permit procedures and provide regular training to personnel.

- Contractor Safety Concerns: Implement a rigorous contractor management program, including pre-qualification, safety training, and site inspections.

8.4.7. Summary and Review Questions

Safety audits serve as a critical tool in identifying potential hazards, assessing risk levels, and implementing preventive measures to mitigate accidents and injuries.

Review questions

1. What are the key elements of a safety audit?

2. What are the different types of safety audit?

3. What are the key components of an effective safety management system?

4. What is PDCA cycle?

5. What are the responsibilities of safety auditor?

9. Chapter 2: Hazard Identification, Risk Assessment and Controls

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9.1. Overview of Hazard Identification, Risk Assessment and Controls

Hazard identification and risk assessment are critical components of any effective safety management system. The ability to identify potential hazards, assess the associated risks, and implement appropriate control measures is essential for preventing accidents and ensuring the safety of all workers. The Hazard Identification and Risk Assessment (SSD/VSQ/N0130) National Occupational Standard (NOS) focuses on equipping learners with the knowledge and skills necessary to categorize and mitigate risks across various domains, including electrical, chemical, and physical hazards.

This chapter provides a detailed guide on how to conduct hazard identification, perform risk assessments, and implement control measures following the hierarchy of controls. It also covers the process of monitoring and reviewing the effectiveness of these controls to ensure continuous improvement in workplace safety.

9.2. Understanding the Scope of Hazard Identification and Risk Assessment

The scope of this NOS encompasses the identification of hazards across different domains, the application of risk assessment methodologies, and the implementation of control measures using the hierarchy of controls. This section outlines the key areas of focus within this NOS, providing the foundation for effective hazard management and risk reduction.

9.2.1. What is Hazard?

"A circumstance present in an environment that has the potential to cause an UNDESIRABLE event inflicting harm on people or damage to equipment or processes."

Source, situation, or act with a potential for harm in terms of human injury or ill health, or a combination of these. – ISO 45001:2018.

a. Hazard Identification Across Various Domains

Hazard identification is the process of recognizing potential sources of harm in the workplace. Hazards can arise in various forms and from different sources, including electrical, chemical, and physical domains. Understanding the nature of these hazards is the first step in preventing accidents and injuries.

9.3. Types of Hazards:

- Physical hazards e.g. fire, electricity, vibration, poor housekeeping

- Chemical hazards e.g. gas, bleach, cleaning agents, fumes, vapour

- Ergonomic hazards e.g. improper setup of workstations, repetitive movements, noise, lighting, thermal comfort

- Biological hazards e.g. animals, virus, mold, fungi, bacteria

- Psychosocial hazards e. g stress, psychology hazards

- Working with tools and machinery

- Working at height

- Electrical work

- Exposure to noise or vibration

Mechanical

- Machinery with moving parts, at height, with hand-held equipment, etc.

- Cuts, abrasions, broken bones, loss of fingers or limbs, eye injuries, hand arm vibration, etc.

9.3.1. Physical hazards:

Causes damage to the body such as:

Electrical

- Overloaded plug, sockets, exposed wires, damaged equipment and incorrectly wired appliances

- Electric shock, burns, fires and explosions

9.3.2.   Chemical hazards:

Able to produce health effects such as:
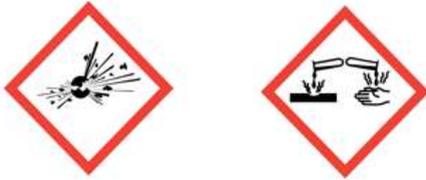
- Dusts and fibres
- Fumes and gases
- Corrosives, poisons

9.3.3.   Biological hazards:

Causes ill health through contact with:

- Micro-organisms (Bacteria, Viruses, Fungi)
- Insects (mites, parasites)
- Human, animal waste
- Sharps (needles, scalpels)

9.3.4.   Ergonomic hazards

Harm caused by:

- Poor working posture
- Poor workstation layout
- Confined space work
- Unsuitable equipment
- Poor lighting

9.3.5.   Psychosocial hazards e. g stress, psychology hazards

Common causes of psychosocial hazards:

- Workload
- Work-Life Balance
- Work Environment
- Violence and Harassment
- Shift Work and Irregular Hours

Example: In a manufacturing plant, the Safety Auditor identifies several physical hazards, such as wet floors that could cause slips, and noise levels that exceed safe thresholds. By recognizing these hazards, the Auditor can take steps to mitigate them, such as improving floor drainage and providing hearing protection.

9.4. Risk Assessment Methodologies

Risk assessment involves evaluating the likelihood and severity of harm that could result from identified hazards. This process helps prioritize risks and determine the most appropriate control measures to implement.

Steps in Risk Assessment:

1. **Identify the Hazard:** Recognize potential sources of harm.

2. **Assess the Risk:** Evaluate the likelihood of an incident occurring and the potential severity of its consequences.

3. **Determine Risk Levels:** Categorize risks based on their likelihood and severity, often using a risk matrix.

4. **Prioritize Risks:** Identify which risks require immediate attention based on their assessed level.

5. **Recommend Controls:** Suggest appropriate control measures to mitigate the risks.

Risk Matrix: A risk matrix is a tool used to assess and categorize risks by plotting the likelihood of an incident against the severity of its potential consequences. This matrix helps Safety Auditors prioritize risks and focus on those that pose the greatest threat.

Example: A Safety Auditor in a chemical plant uses a risk matrix to assess the hazards associated with handling corrosive substances. The assessment reveals a high likelihood of exposure and severe potential consequences, leading the Auditor to prioritize the implementation of robust control measures.

c. Implementation of the Hierarchy of Controls

The hierarchy of controls is a systematic approach to managing risks by implementing control measures in order of effectiveness. This hierarchy ranges from the most effective—elimination of the hazard—to the least effective—use of personal protective equipment (PPE).

Hierarchy of Controls:

1. **Elimination:** Completely remove the hazard from the workplace.

2. **Substitution:** Replace the hazardous substance or process with a less dangerous one.

3. **Engineering Controls:** Implement physical changes to the workplace, such as ventilation systems or machine guards, to reduce exposure to hazards.

4. **Administrative Controls:** Change the way work is performed, such as rotating shifts or implementing safe work practices, to minimize exposure to hazards.

5. **Personal Protective Equipment (PPE):** Provide workers with protective gear, such as gloves, helmets, and respirators, to reduce the risk of injury.

Example: In a construction site, an employee identifies the risk of falls from height. Following the hierarchy of controls, the safety manager first looks for ways to eliminate the need to work at height (elimination), then considers using scaffolding instead of ladders (substitution). If working at height cannot be avoided, guardrails are installed (engineering control), safe work procedures are developed (administrative control), and workers are provided with fall protection equipment like harnesses (PPE).

9.5. Learning Objectives for Hazard Identification and Risk Assessment

By the end of this chapter, learners should be able to:

9.5.1. Hazard Identification

- **Understand Basic Definitions:** Gain a clear understanding of key terms such as hazards, unsafe conditions, incidents, and near-misses. Recognize the difference between fatal and non-fatal incidents and the importance of reporting and investigating near-misses.

- **Identify Hazards Across Domains:** Learn to identify hazards in various domains, including electrical, chemical, and physical environments, and understand the potential risks associated with each.

Example: After training, a Safety Auditor in a warehouse should be able to identify hazards such as exposed wiring (electrical), leaking containers of cleaning chemicals (chemical), and cluttered aisles (physical) and take appropriate actions to mitigate these risks.

9.5.2. Risk Assessment

- **Categorize Risks:** Learn to categorize risks based on their likelihood and severity, using tools like the risk matrix to prioritize which risks need immediate attention.

- **Apply Control Measures:** Develop the ability to apply appropriate control measures to mitigate identified risks, following the hierarchy of controls to ensure maximum effectiveness.

Example: A Safety Auditor in a factory setting might assess the risk of machinery-related injuries. By categorizing these risks, the Auditor can implement engineering controls such as installing machine guards and administrative controls like regular maintenance schedules to reduce the likelihood of accidents.

9.6. Performance Criteria for Hazard Identification and Risk Assessment

To successfully implement hazard identification and risk assessment, learners must meet the following performance criteria:

9.6.1. Conduct Comprehensive Risk Assessments

Perform thorough risk assessments that cover all potential hazards in the workplace. This involves systematically identifying hazards, evaluating the associated risks, and determining the most effective control measures to mitigate those risks.

Example: In a chemical processing plant, the Safety Auditor conducts a risk assessment that identifies the hazards associated with handling toxic chemicals. The assessment leads to the implementation of engineering controls, such as fume hoods, and administrative controls, like strict handling procedures, to protect workers from exposure.

9.6.2. Apply Control Measures Based on Risk Severity

Implement control measures that are appropriate to the severity of the identified risks. This requires understanding the hierarchy of controls and selecting the most effective measures to reduce or eliminate the risk.

Example: After identifying the risk of electric shock from exposed wiring in a factory, the Safety Auditor applies control measures by eliminating the hazard through proper insulation (elimination) and ensuring that all wiring is enclosed in protective conduits (engineering control).

9.6.3. Monitor and Review the Effectiveness of Implemented Controls

Regularly monitor and review the effectiveness of the control measures that have been implemented. This involves tracking the outcomes of these measures, making adjustments as necessary, and ensuring continuous improvement in hazard management and risk reduction.

Example: The Safety Auditor monitors the effectiveness of the installed machine guards in a factory by tracking the number of machine-related incidents before and after the installation. If the number of incidents decreases, the controls are deemed effective. If not, the Auditor might consider additional controls or adjustments.

9.7. Case Studies: Hazard Identification and Risk Assessment in Action

This section provides real-world case studies that illustrate the practical application of hazard identification and risk assessment in different industrial settings.

Case Study 1: Electrical Hazard Identification and Mitigation in a Manufacturing Facility

Background: A manufacturing facility experienced several near-miss incidents related to faulty electrical equipment. The Safety Auditor was tasked with identifying the hazards and implementing control measures.

Actions Taken:

- Conducted a comprehensive risk assessment that identified multiple electrical hazards, including exposed wiring, overloaded circuits, and outdated equipment.

- Implemented a combination of control measures, including replacing old wiring (substitution), installing circuit breakers (engineering control), and conducting regular electrical safety inspections (administrative control).

- Provided PPE, such as insulated gloves and footwear, to workers who handled electrical equipment.

Outcome: The facility saw a significant reduction in electrical incidents, with no reported electrical shocks or fires in the six months following the implementation of the control measures.

Case Study 2: Chemical Hazard Risk Assessment in a Laboratory Setting

Background: A research laboratory handled a variety of hazardous chemicals, posing risks such as exposure to toxic fumes and chemical spills. The Safety Auditor conducted a risk assessment to identify and mitigate these hazards.

Actions Taken:

- Identified key chemical hazards, including the risk of inhaling toxic fumes and the

potential for skin burns from corrosive substances.

- Implemented engineering controls, such as installing fume hoods and chemical-resistant work surfaces.

- Developed administrative controls, including strict handling procedures and emergency response plans for chemical spills.

- Provided workers with PPE, including gloves, goggles, and lab coats, to minimize exposure to hazardous chemicals.

Outcome: The laboratory improved its safety record, with no incidents of chemical exposure reported in the year following the risk assessment. The laboratory's emergency response plan was also successfully tested in a drill, ensuring preparedness for any future incidents.

9.8. Summary and Review Questions

Effective hazard identification and risk assessment are essential for preventing accidents and ensuring workplace safety. By identifying hazards, assessing the associated risks, and implementing appropriate control measures, Safety Auditors can protect workers and reduce the likelihood of incidents.

Review Questions:

1. What are the key steps in conducting a risk assessment?

2. Explain the different types of hazards that can be found in a workplace.

3. How does the hierarchy of controls guide the implementation of risk mitigation measures?

4. What is the purpose of using a risk matrix in risk assessment?

5. Why is it important to monitor and review the effectiveness of control measures after they have been implemented?

10. Chapter 3: Risk Analysis Methodology

10.1. Risk Analysis

Risk analysis is a systematic process of identifying, assessing, and prioritizing potential risks to a project or enterprise. It helps organizations make informed decisions and develop strategies to mitigate or avoid these risks.

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          │   Location, Layout, Process Parameters │
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             │      Hazard Identification     │
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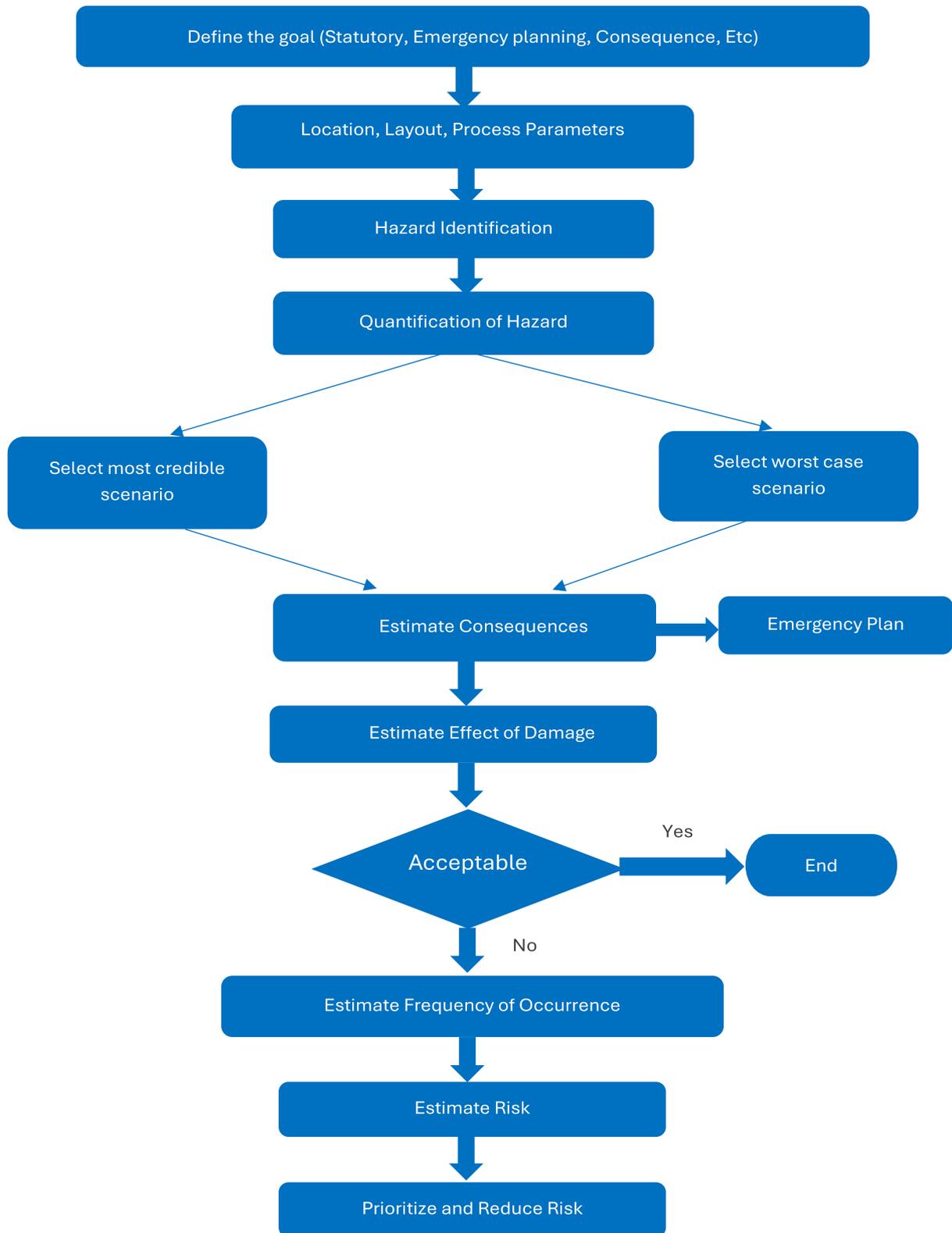
10.2.   Stages of process plant and risk analysis

The life span of a process industry comprises a number of stages from conceptual to decommissioning. Each stage of a plant may have hazards, some general and some stage specific. Hazard identification and risk analysis techniques that may be applied at different stages of a plant are given in this table.

S. No	Project Stage	Hazard Identification & Hazard Analysis Techniques
1	Pre-Design	a) Hazard indices b) Preliminary Hazard Analysis c) What-If Analysis d) Checklists
2	Design/Modification	a) Process design checks and use of checklist b) HAZOP studies c) Failure Mode & Effect Analysis d) What-If Analysis e) Fault Tree Analysis f) Event Tree Analysis
3	Construction	a) Checklists b) What-If Analysis
4	Commissioning	a) Checklist b) Plant Safety Audits c) What-If Analysis
5	Operation & Maintenance	a) Plant Safety Audits b) What-If Analysis c) Checklists
6	Decommissioning/Shutdown	a) Checklists b) What-If Analysis

10.3.   Risk Calculation

Risk can be defined as a measure of economic loss, human injury or environmental damage both in terms of likelihood and magnitude of loss, injury or damage. In this document only the property damage, that is, economic loss and human loss have been considered. Risk is expressed as the product of frequency of an event and the magnitude of the consequences that result each time the event occurs. The mathematical expression for risk is:

$$R=FC$$

Where

R = risk (loss or injury per year);

F = frequency (event per year); and

C = consequence (loss or injury per event)

In many cases the hazard cannot be eliminated though the probability of occurrence can be reduced with addition of safety measures and at a financial cost. The consequence in terms of deaths/year or in terms of monetary loss per year can be estimated by the methods of consequence analysis.

10.4.   Risk Criteria

Risk criteria are the acceptable levels of risk that can be tolerated under a particular situation, 'In many countries the acceptable risk criteria have been defined for industrial installations and are yet to be defined in the Indian context, but values employed in other countries can be used for comparison.

10.5.   Guidelines for application of risk analysis techniques

This outlines the various approaches and techniques that may be used during the risk analysis of a process plant. This concluding section enumerates some of the critical features of the methodology of risk analysis so as to aid the prospective users apply most effectively:

- While undertaking a risk analysis, careful consideration of the various possible approaches/ techniques is necessary, since each have their individual strengths and limitations.

- The method of risk analysis requires realistic accident scenario assumptions as well as comprehensive plant operational information and, in particular, reliable data pertaining to component system failure frequencies, human error rates, etc. In the event of any uncertainties relating to the relevant information and data, the use of experience and judgment would be critical to obtaining risk estimates that provide reliable support to subsequent decision-making.

- All assumptions applied during a risk analysis exercise need be documented with clarity, so as to enable better comparison and communication.

- In specific instances, the risk analysis method may require consideration of the external events as probable causative factors in large-scale hazardous chemical releases.

- Wherever feasible the risk analysis for a process plant should incorporate possible environmental consequences as well as possible human health effects that are immediate and/or delayed.

- Risk analysis need to be undertaken newly in the event of any major changes introduced in the plant configuration. It must also be updated periodically whenever improved plant operational information and equipment/human failure data becomes available. Further, it is advisable to improve risk calculations using newer analytical methods as and when they are developed.

With the techniques used for the analysis large number of results based on numbers of accident scenarios used, the various weather classes chosen, the assumptions in calculating each case would be available, but finally it is very important to summarize all the results in one format providing clearly what factor appear to be important in overall analysis. A format must be chosen for presenting the results of the analysis and acceptability is to be established either in terms of 'risk criteria' or 'distance under consideration which face the consequence' or 'percentage of damage up to a distance under consideration'.

10.6. Details of chemical process risk analysis methods

10.6.1. Hazard Identification and Risk Analysis Sequence

The purpose of hazard identification and risk analysis is to identify possible accidents and estimate their frequency and consequences. Conceivably the initiating event could be the only event but usually it is not and as a matter of fact there several events between the initiating event and the consequence and these events -are the responses of the systems and the operators. Different responses to the same initiating event will often lead to different accident sequences with varying magnitude of consequences. While identifying the hazard(s) a filtering process is carried and only portions with potential risk are "involved for risk analysis. Hazard is not considered for further analysis, if (a) it is unrealizable, and(b) if it is not very significant. In many cases, once the hazard has been identified the solution is obvious. In some more cases the solution is obtained from experience. In many other cases it is taken care of by codes of practice or statutory requirement.

10.7. Hazard Identification and Quantification

10.7.1. Checklist:

These are simple and quick means of applying the experience to designs or situations to ensure that the features appearing in the list are not overlooked. Checklists are used to indicate compliance with the standard procedure. It is intended for standard evaluation of plant hazards and a convenient means of communicating the minimal acceptable level of hazard evaluation that is required for any job generally leading to 'yes-or-no' situation.

The checklist is frequently a form for approval by various staff and management functions before a project can move from one stage to the next. It serves both as a means of communication and as a form of control and can highlight a lack of basic information or a situation that requires a detailed evaluation.

Checklists are qualitative in nature; limited to the experience base of the author of the checklist, hence, should be audited and updated regularly. It is a widely used basic safety tool and can be applied at any stage of a project or plant development. Accordingly, it is named as Process checklist, System checklist, Design checklist, etc.

A processor system checklist can be applied to evaluating equipment, material, or procedures and can be used during any stage of a project to guide the user through common hazards by using standard procedures.

10.7.2.   Safety Audit

It is an intensive plant inspection intended to identify the plant conditions or operating procedures that could lead to accidents or significant losses of life and property. It is used to ensure that the implemented safety/risk management programs meet the original expectations and standards. It is also called 'Safety review', 'Process review', and 'Loss prevention review'. In essence, safety audit is a critical appraisal of effectiveness of the existing safety programme in a plant.

The review looks for major hazardous situation and brings out the areas that need improvement. The steps for the identification process are:

a)   Obtaining response from plant on a pre-audit questionnaire.

b)   Preparation of checklist, inspection and interview plant personnel; and

c)   Preparation of safety audit report in the form of recommendation.

The results are qualitative in nature. The review seeks to identify inadequacy in design, operating procedures that need to be revised and to evaluate the adequacy of equipment maintenance or replacement. Assigning grades for effectiveness of safety management of the plant in the areas such as organization, operating procedures, monitoring, maintenance, etc is possible, a score card can be prepared to get an appraisal of safety status of plant. While this technique is most applied to operating plants it is equally applicable to pilot plants, storage facilities or support functions. The periodicity of such studies depends on the risk involved in the process and the commitment of the management. It usually varies from once in a year to one in seven years.

10.7.3.   Hazard and Operability Study (HAZOP)

The HAZOP study is made to identify hazards in a process plant and operability problems, which could compromise the plant's ability to achieve design intent. The approach taken is to form a multi-disciplinary team that works to identify hazards by searching for deviations from design intents. The following terms are used for the process for analysis:

a)   Intentions — Intention defines how the plant is expected to operate,

b)   Deviations — These are departures from intentions,

c)   Causes — These are reasons why deviations might occur, and

d)   Consequences — Results of deviations should they occur

The method uses guidewords, which are used to quantify or qualify the intention in order to guide and stimulate the hazard identification process. The guidewords are used to generate deviations from the design intent. The team then identifies cause and consequences of the deviations.

The HAZOP-study requires that the plant be examined for every line. The method applies all the guidewords in turn and outcome is recorded for the deviation with its causes and consequences. Example:

a)   For a particular line,

b)   Taking any guide word for example 'No';

c)   Deviation in process parameters, namely flow/ temperature,

d)   For each deviation the causes for such deviations,

e)   Consequences may be several C1, C2, C3, etc, and

f)   Measures to recti@ the root cause for deviation.

10.8.   Methodology for Hazard Identification

To identify hazards and risks of activities, product and services based on classification of project activities & associated construction hazards. This shall include site assessment, interaction with concerned personnel performing the activities and review of the records.

10.8.1.   Consider the following other conditions while identifying HSE Hazards and Risks:

Direct (D): OSHE Hazards of activity, which organization can control itself.

Indirect (I): OSHE Hazards of activity, over which organization can have influence upon, related to principal employer /visitors / sub-contractors / suppliers / transporters / distributors / retailers etc.

Routine (R): Activity which is performed regularly.

Non-Routine (NR): Activity which are performed based on process / equipment break down,

emergency requirements such as Fire Fighting (other than Mock Drills) etc.

Normal Condition: Normal operating conditions

Abnormal Condition: Situations / conditions which may occur for which the plant is not designed for.

Emergency Condition: Situation which may warrant the immediate attention of a group of persons or department for the purpose of control and may also lead to domino concern.

10.9.   OSHE Risk Assessment

The OSHE Risk assessment shall be conducted following a brainstorming session. Based on Risk Assessment Matrix.

The Quantitative Parameters shall include determining the Likelihood and Possible level of Severity of the OSHE hazards as identified and represented as OSHE Risk :OSHE Risk is a product of:

- **Likelihood of Occurrence (L)** of OSHE hazards &
- **Possible Severity (S)** of the OSHE hazards

10.9.1.   Likelihood of Occurrence:

The Probability of Occurrence of the OSHE hazards, as determined on the basis of the degree of existing control measures in place (Technological / Operational Control/ Competence/ Measurement & Monitoring) & Past experience / frequency of occurrence.

Likelihood	Adequacy of Control Measures or Frequency of incident event in the Past	
Highly Unlikely (1)	Almost no gap exists in control of the identified OSHE hazard as technology, operational control, competence, measurement monitoring are in place	**Improbable:** Has occurred in world-wide but not in Group Company
Unlikely (2)	There is any minor gap / weakness in control of the identified OSHE hazard	**Remote:** Has occurred in another Group Company
Likely (3)	There are unreasonable gaps in control of the identified OSHE hazard with respect to adoption of technology, operational control, measurement monitoring and competence	**Occasional:** Has occurred in the plant or site
Very Likely (4)	There are unreasonable major gaps in control of the identified OSHE hazard with respect to adoption of technology, operational control, measurement monitoring and competence	**Probable:** It happens several times each year in the plants/sites
Certain (5)	There are almost no controls in place in controlling the identified OSHE hazard and have occurred in the past but ignored.	**Frequent:** Happens several times per year in same location or Operation

10.9.2. Possible Severity:

The degree of harm (to people safety & occupational Health, asset / environmental damage / Waste Generation & Resource consumption)

Note: The above parameters i.e. Likelihood and Severity of HSE hazards occurred / might occur due to an activity are weighted as per guidance given in the below table.

Level of Harm	People	Damage to Asset (Equipment / Machinery / Plant) / Environment	Waste Generation/Consumption of Resources/LC
Insignificant (1)	Momentary Discomfort / inconvenience	No action required < or = Rs. 5000	Controls are well established with effective benchmarking
Slightly Harmful (2)	Minor injuries (Non-reportable) requires first-aid	Minor damage > Rs. 5000 but < or = Rs.50,000	Controls are established however minor. opportunity for improvement
Harmful (3)	Injuries, absence from the work less or equal to 48 hours / temporary disability / Sickness	Moderate damage > Rs. 50,000 but < or = 5 Lakh	Controls are established however, can be further improved
Very harmful (4)	Major injuries, absence from the work more than 48 hrs / Partial disability	Severe damages > 5 lakh but < or = 50 Lakhs	Controls are in place however largely ineffective. Legislative requirements not complied.
Extremely Harmful (5)	Fatal /Permanent Disability/ Chronic diseases. Major incidents involving large number of people	Annihilation (complete destruction) > 50 Lakhs	No Control at all including, Uncontrolled Generation of waste/specific consumption

10.9.3.   HSE Risk Assessments Matrix & Levels:

The HSE risk based on quantitative assessment shall be prioritized in the following levels.

Severity /Likelihood	Insignificant (1)	Slightly Harmful (2)	Harmful (3)	Very Harmful (4)	Extremely Harmful (5)
Highly Unlikely (1)	Trivial (1)	Trivial (2)	Tolerable (3)	Tolerable (4)	Moderate (5)
Unlikely (2)	Trivial (2)	Tolerable (4)	Moderate (6)	Moderate (8)	Substantial (10)
Likely (3)	Tolerable (3)	Moderate (6)	Moderate (9)	Substantial (12)	Substantial (15)
Very Likely (4)	Tolerable (4)	Moderate (8)	Substantial (12)	Substantial (16)	Intolerable (20)
Certain (5)	Moderate (5)	Substantial (10)	Substantial (15)	Intolerable (20)	Intolerable (25)

Risk Level	Category	Remarks
TRIVIAL		
TOLERABLE Controls are adequate & maintained Efforts may be made to reduce the HSE risk, if feasible.	**ACCEPTABLE HSE RISK** Risk up to moderate levels category are considered as ALARP	**Continue to identify the improvement measures**
MODERATE Controls are adequate & maintained Efforts may be made to reduce the HSE risk, if feasible. Documentary evidence are required as applicable.		
SUBSTANTIAL Standards / Operational Controls are urgently required to reduce the HSE risks.	**UNACCEPTABLE HSE RISK**	**Additional Control are necessary to the extent (ALARP) is achieved**
INTOLERABLE Immediate actions are required. Work should not be started or continued until the HSE risk has been reduced.		

10.9.4. Input for Control Measures/ Procedures:

Consider, whether following inputs are the part of current control measures:

Legislative Concern (LC)

Any HSE hazard and risks covered by existing and applicable HSE Legislation and other notifications issued from time to time including the HSE requirements to which the company has subscribed.

Pollution prevention (PP)

Opportunity for resource conservation / waste minimization

10.10. Determining HSE Risk Control Measures

Based on the HSE Risk Level, the control measures shall be undertaken on the principles of the following hierarchy:

10.11. Case Studies: Risk Analysis Methodology

Case study 01

A manufacturing plant producing automotive components was facing increasing safety concerns. Recent near-miss incidents and minor injuries highlighted the need for a comprehensive safety risk analysis to identify potential hazards and implement effective control measures.

Methodology

The plant adopted a systematic approach to safety risk analysis, combining the following methodologies:

1. **Hazard Identification:**

    *   **Brainstorming Sessions:** Involved a cross-functional team of engineers, operators, and safety experts to identify potential hazards.

    *   **Job Safety Analysis (JSA):** Detailed analysis of each job task to identify potential hazards and control measures.

    *   **Walk-Through Inspections:** Regular physical inspections of the plant to identify hazards and unsafe conditions.

2. **Risk Assessment:**

    *   **Risk Matrix:** Used a risk matrix to evaluate the severity and likelihood of each identified hazard.

    *   **Risk Ranking:** Prioritized hazards based on their risk level.

3. **Risk Control:**

    *   **Hierarchy of Controls:** Applied the hierarchy of controls to select the most effective control measures, starting with elimination or substitution, followed by engineering controls, administrative controls, and personal protective equipment (PPE).

    *   **Implementation of Controls:** Developed and implemented specific control measures, such as machine guarding, emergency stop buttons, and training programs.

10.12. Summary and Review Questions

Risk analysis is a systematic process of identifying, assessing, and prioritizing potential risks to a project or enterprise. It helps organizations make informed decisions and develop strategies to mitigate or avoid these risks.

Review Questions

1. What is HAZOP?

2. What are the different methods of Hazard Identification and Quantification?

3. What is Non-Routine (NR) activities that needs to be covered in hazard identification?

4. What is the mathematical expression for Risk?

5. What are different stages adopted in risk analysis for a process plant?

11. Model Questions

Model: 01

<u>NOS-SSD/VSQ/N0113:</u> **Concept of Safety Audit, Need, Scope and Methodologies of safety audit**

Safety Auditor Certification Assessment Paper

Total Marks: 100

Time: 2 Hours

<u>Section A</u>: Multiple Choice Questions (MCQs)

(Marks-60)

Concept of Safety Audit

1. What is the primary objective of a safety audit? (PC1)

A) Increase profitability

B) Identify and mitigate hazards

C) Improve marketing strategies

D) Train employees

(Marks: 2)

2. What is an important requirement of a safety audit? (PC1)

A) It must be conducted by a third party only

B) It should occur annually

C) It must involve employee feedback

D) It should only focus on physical hazards

(Marks: 2)

3. What is the difference between a safety audit and a safety inspection? (PC1)

A) An audit is broader and examines systems; an inspection focuses on specific areas.

B) An audit is informal; an inspection is formal.

C) An audit is conducted by external parties; an inspection is internal only

D) There is no difference.

(Marks: 2)

4. What does the term "window dressing" refer to in an auditing context? (PC2)

A) Improving the aesthetic of financial reports

B) Manipulating financial statements to present a more favourable picture

C) Preparing audits for regulatory compliance

D) Cleaning up the office environment

(Marks: 2)

5. What is the role of an auditor in promoting ethical practices? **(PC2)**

A) To enforce company policies

B) To act as a deterrent against unethical behaviour

C) To report only positive findings

D) To develop new strategies for revenue generation

(Marks: 2)

6. Which of the following is a key responsibility of Safety auditor? (**PC2**)

A) Making business decisions for management

B) Ensuring compliance with accounting standards

C) Ensuring compliance with Safety Standards

D) Managing company operations

(Marks: 2)

7. Observations during an audit help to: (PC3)

A) Conduct employee interviews

B) Identify potential hazards in real-time

C) Review historical data

D) Ensure compliance with financial regulations

(Marks: 2)

8. What is the primary purpose of vouching in safety audit? (PC3)

A) To verify the authenticity of transactions

B) To evaluate employee performance

C) To verify the authenticity of records and safety-related activities

D) To summarize Safety related data

(Marks: 2)

9. What is the main goal of verification in Safety auditing? (PC3)

A) To prepare forecasts

B) To assess the effectiveness of Safety Standard

C) To confirm the accuracy and existence of Safety records and Data

D) To reduce operational costs

(Marks: 2)

Safety Audit Process and Stages

10. Which stage involves planning and notification of the safety audit? (PC4)

A) Closing meeting

B) Pre-audit preparations

C) Opening meeting

D) Audit fieldwork

(Marks: 2)

11. During the opening meeting of a safety audit, who typically participates? (PC4)

A) Only the auditor

B) Management and audit team

C) Only employees

D) External stakeholders

(Marks: 2)

12. Why is it important to notify employees before a safety audit? (PC4)

A) To ensure they are not present during the audit

B) To prepare them for potential changes

C) To gather their personal information

D) To avoid legal liabilities

(Marks: 1)

13. What is involved in the pre-audit preparations? (PC5)

A) Conducting the audit

B) Collecting relevant documentation and information

C) Finalizing the audit report

D) Implementing safety measure

(Marks: 2)

14. During the first stage of a safety audit, what is typically assessed? (PC5)

A) Compliance with safety regulations

B) The safety culture of the organization

C) The effectiveness of safety training programs

D) The overall risk management strategy

(Marks: 2)

15. Which of the following best describes the first stage of a safety audit? (PC5)

A) Planning and preparation
B) Documentation review
C) Implementation of recommendations
D) Reporting findings

(Marks: 1)

16. During the fieldwork stage, auditors primarily do what? (PC6)

A) Analyse data

B) Observe and collect evidence

C) Prepare the final report

D) Conduct interviews with upper management

(Marks: 2)

17. What is the purpose of the management's response stage? (PC6)

A) To evaluate the auditor's performance

B) To provide feedback and outline corrective actions

C) To close the audit

D) To plan future audits

(Marks: 2)

18. Why is it important to get management's response during a safety audit? (PC6)

A) To reduce the number of audits conducted

B) To validate the audit findings and identify corrective actions

C) To finalize the audit report without changes

D) To ensure compliance with marketing standards

(Marks: 1)

19. What is the primary purpose of the closing meeting in a safety audit? (PC7)

A) To conduct additional fieldwork

B) To present findings and discuss recommendations

C) To finalize the budget for safety programs

D) To train employees on safety protocols

(Marks: 2)

20. Which document should be prepared as a result of the closing meeting? (PC7)

A) A new marketing strategy

B) An updated safety policy

C) A summary of findings and agreed-upon actions

D) Employee performance reviews

(Marks: 1)

Types and Scope of Safety Audit

21. What are the challenges in internal audit? (PC8)

A) Budget not permitted.

B) Organisation will take it very lightly

C) Lack of objective and internal pressure.

D) No challenges have been faced by any internal auditor.

(Marks: 2)

22. What is the primary purpose of an internal audit? (PC8)

A) To provide assurance to external stakeholders

B) To improve internal processes

C) To evaluate financial performance

D) To comply with legal requirements

(Marks: 1)

23. What is a first-party audit? (PC9)

A) An audit conducted by an external organization
B) An internal audit performed by the organization itself
C) An audit that assesses supplier compliance
D) An audit focusing on financial performance

(Marks: 2)

24. What is a potential drawback of first-party audits?((PC9)

A) They may lack objectivity due to internal biases.

B) They are typically more thorough than third-party audits.

C) They do not focus on compliance issues.

D) They are less expensive than other audits.

(Marks: 1)

25. What distinguishes a compliance audit from a performance audit? (PC1O)

A) Compliance audits check adherence to standards, while performance audits assess efficiency.

B) Compliance audits focus on financial aspects, while performance audits focus on safety.

C) Compliance audits are conducted internally, while performance audits are external.

D) There is no distinction; they are the same.

(Marks: 2)

26. In a compliance audit, which of the following is commonly assessed? (PC1O)

A) Profit margins
B) Safety protocols and legal requirements
C) Customer satisfaction
D) Marketing strategies

(Marks: 1)

27. What is a key element in defining the scope of an audit? (PC11)

A) The auditor's experience

B) The available budget

C) The objectives of the audit

D) The duration of the audit

(Marks: 2)

28. What is a key objective of auditing machinery? (PC11)

A) To assess employee satisfaction

B) To evaluate the operational efficiency and safety of the machinery

C) To conduct financial analysis

D) To review marketing strategies

(Marks: 1)

PDCA Cycle for Safety Audit Process

29. What does PDCA stand for in the context of safety management? (PC12)

A) Plan-Develop-Check-Act

B) Plan-Do-Check-Act

C) Prepare-Do-Check-Act

D) Plan-Do-Confirm-Act

(Marks: 2)

30. Why is continuous improvement important in a safety management system? (PC12)

A) To ensure compliance with regulations

B) To adapt to changing conditions and enhance safety performance

C) To reduce costs

D) To maintain employee satisfaction

(Marks: 2)

31. What is the primary purpose of a Safety Management System (SMS)? (PC12)

A) To reduce costs

B) To enhance safety performance and reduce incidents

C) To increase production

D) To improve employee satisfaction

(Marks: 1)

32. Which component of the PDCA cycle involves establishing safety objectives and plans? (PC13)

A) Do

B) Check

C) Act

D) Plan

(Marks: 2)

33. In the 'Do' phase of the PDCA cycle, what is typically implemented? (PC13)

A) Safety audits

B) Safety training and procedures

C) Incident investigations

D) Regulatory compliance checks

(Marks: 2)

34. What is the primary goal of the "Check" stage in the PDCA cycle? (PC14)

A) To develop new safety policies

B) To monitor and evaluate the effectiveness of implemented actions

C) To conduct employee training

D) To finalize the audit report

(Marks: 1)

35. During the "Check" phase, what type of data is typically analysed? (PC14)

A) Financial performance data
B) Compliance and safety performance data
C) Employee satisfaction surveys
D) Market research data

(Marks: 2)

Section B: Practical Application

(Marks -40)

Concept of Safety Audit (3*4=12)

1. Scenario: (PC1)

    A manufacturing company is preparing for its annual safety audit. The safety manager is tasked with ensuring that all safety protocols are up to date and that the workplace complies with legal regulations.

    Question:

    What are the primary objectives of conducting this safety audit, and what specific requirements should the safety manager prepare for to ensure a successful audit?

    (Marks: 4)

2. Scenario: (PC2)

    During a recent internal audit of a construction site, the auditor noticed that some safety procedures were not being followed. However, the site manager quickly arranged for the auditors to see only the areas that were compliant, leaving out the unsafe practices.

    Question:

    Discuss the implications of "window dressing" in this audit scenario. What responsibilities does the auditor have to ensure a true representation of safety practices at the construction site?

(Marks: 4)

3. Scenario: (PC3)

An auditor is reviewing the safety compliance records of a healthcare facility. To ensure thoroughness, the auditor plans to employ various audit techniques.

Question:

Which specific audit techniques should the auditor use in this scenario, and how would each technique contribute to a comprehensive evaluation of the safety management system?

(Marks: 4)

Safety Audit Process and Stages (4*3=12)

4. Scenario:(PC4)

A safety audit is scheduled for a chemical processing plant. The audit team is tasked with planning the audit methodology, notifying relevant stakeholders, and organizing the opening meeting.

Question:

What steps should the audit team take to effectively plan the safety audit? Include how they should notify stakeholders and what key topics should be covered in the opening meeting to ensure everyone is aligned on the audit process.

(Marks: 3)

5. Scenario:(PC5)

Before conducting a safety audit at a logistics warehouse, the lead auditor is preparing for the various stages of the audit. The audit involves multiple teams and diverse safety protocols.

Question:

Describe the key activities involved in the pre-audit preparations and outline the first four stages of the safety audit process. What considerations should the lead auditor keep in mind to ensure a thorough and effective audit?

(Marks: 3)

6. Scenario (PC6)

During the fieldwork phase of a safety audit at a manufacturing facility, the audit team identifies several compliance gaps and potential safety hazards. After completing their observations, they need to discuss their findings with management.

Question:

What approach should the audit team take to communicate their findings to management? Additionally, discuss the key elements that should be included in the report draft to effectively summarize the audit results and recommendations.

(Marks: 3)

7. Scenario:(PC7)

After completing a safety audit for a healthcare facility, the audit team is preparing for the closing meeting. They need to present their findings and discuss the next steps for final audit distribution and follow-up actions.

Question:

What should the audit team cover in the closing meeting to ensure all stakeholders understand the findings?

(Marks: 3)

Types and Scope of Safety Audit (4*2=8)

8. Scenario:(PC8)

   A company is deciding whether to conduct an internal audit of its safety protocols or to hire an external auditor for the task. The management team is debating the merits of each option.

   Question

   What are the key differences in the scope of internal versus external safety audits?

   (Marks: 2)

9. Scenario:(PC9)

   A food manufacturing company is evaluating its safety audit needs and is considering whether to conduct first-party, second-party, or third-party audits to ensure compliance with safety standards.

   Question

   Explain what constitutes a first-party audit in this context.

   (Marks: 2)

10. Scenario (PC10)

    A healthcare organization is planning a series of audits to ensure its safety protocols are effective. They are considering conducting a compliance audit, a program audit, and a management system audit.

    Question

    What is the scope of a compliance audit in a healthcare setting, and what specific areas would it typically cover?

    (Marks: 2)

11. Scenario:(PC11)

    A construction firm is preparing to conduct various safety audits for different scopes: a specific task, a program, an activity, a project, and machinery.

    Question

    What should be the focus of the audit for a specific task?

    (Marks: 2)

PDCA Cycle for Safety Audit Process (2*3+1*2=8)

12. Scenario:

    A manufacturing facility is looking to improve its safety management system and is considering implementing the PDCA cycle to structure its approach.

    Question:

    What are the key components of the PDCA cycle that the facility should focus on to enhance its safety management system?

    (Marks: 3)

13. Scenario:

The safety manager of a construction site is in the "Plan" stage of the PDCA cycle, where they are developing a safety plan to address recent incidents.

Question Part A:

What specific steps should the safety manager take in the "Plan" stage to identify hazards and set safety objectives?

(Marks: 2)

14. Scenario:

After implementing new safety protocols at the construction site, the safety manager is now entering the "Check" stage of the PDCA cycle to evaluate the effectiveness of these changes.

Question Part A:

What metrics or indicators should the safety manager use to assess the success of the newly implemented safety protocols during the "Check" stage?

(Marks: 3)

SSD/VSQ/NO13O: **Hazard identification, categories, and control.**

Safety Auditor Certification Assessment Paper

Total Marks: 100

Time: 2 Hours

Section A: Multiple Choice Questions (MCQs)

(MARKS-60)

Basic Hazard Identification

1. Lost time injury refers to:(PC1)

A) Any injury, regardless of time away from work

B) An injury that requires medical treatment

C) An injury that results in missed work days

D) A minor injury that needs first aid

(Marks: 2)

2. What is a hazard? (PC1)

A) An event that causes harm

B) A condition that has the potential to cause harm

C) An action taken to mitigate risk

D) A regulatory requirement

(Marks: 2)

3. What defines an incident? (PC1)

A) An event that results in injury or damage

B) A near-miss situation

C) An event that does not result in harm

D) All of the above

(Marks: 2)

4. What is the primary purpose of personal protective equipment (PPE)? (PC2)

A) To enhance productivity

B) To reduce exposure to hazards

C) To improve workplace aesthetics

D) To comply with insurance requirements

(Marks: 2)

5. Why is it important to properly maintain PPE? (PC2)

A) To extend its aesthetic appeal

B) To ensure it is comfortable

C) To ensure it functions effectively and protects the user

D) To comply with company policy

(Marks: 2)

6.Identify the sign. (PC3)

A) Prohibition Signs

B) Fire safety signs

C) Prohibition signage

D) All the above

(Marks: 2)

Hierarchy of Control

7. If a workplace hazard can be completely removed, which control should be used? (PC4)

A) Engineering controls

B) Administrative controls

C) PPE

D) Elimination

(Marks: 2)

8. What is the primary purpose of the hierarchy of controls? (PC4)

A) To increase productivity

B) To eliminate or reduce hazards

C) To improve employee morale

D) To train new employees

(Marks: 2)

9. Why is elimination the most effective control method? (PC5)

A) It is the cheapest option.

B) It completely removes the hazard.

C) It requires less employee training.

D) It is easy to implement.

(Marks: 2)

10. What is a key benefit of engineering controls? (PC5)

A) They require minimal resources.

B) They reduce reliance on employee behaviour.

C) They are the most cost-effective.

D) They are easy to maintain.

(Marks: 2)

11. What does the hierarchy of controls prioritize?(PC6)

A) Cost-effectiveness

B) Employee preference

C) Effectiveness of hazard reduction

D) Complexity of implementation

(Marks: 2)

12. Which of the following best describes the hierarchy of controls? ?(PC6)

A) A random set of safety measures

B) A structured approach to managing hazards

C) A list of optional safety practices

D) A guideline for training employees

(Marks: 2)

Basic Hazard categories and control

13. Which of the following is a primary electrical hazard? (PC7)

A) Exposure to chemicals

B) Shock and electrocution

C) Slips and trips

D) Fire from flammable liquids

(Marks: 2)

14. What does "lockout/tagout" refer to? (PC7)

A) A method to secure tools

B) A safety procedure for hazardous energy control

C) A method of training employees

D) A safety gear

(Marks: 1)

15. What is the purpose of fire extinguishers? (PC7)

A) To prevent fires from starting

B) To control and extinguish small fires

C) To provide heat

D) To signal for help

(Marks: 2)

16. What should be done before using any power tool? (PC8)

A) Check for proper functioning

B) Use without inspection

C) Share with co-workers

D) Ignore user manuals

(Marks: 2)

17. What is a common hazard associated with hand tools? (PC8)

A) Electrical shock

B) Cuts and lacerations

C) Chemical exposure

D) Falls

(Marks: 1)

18. What is a critical step in machine maintenance? (PC8)

A) Only cleaning when dirty

B) Performing regular inspections

C) Ignoring manufacturer recommendations

D) Working without training

(Marks: 2)

19. Which category of hazard is associated with "working at height"? (PC9)

A) Biological hazards

B) Ergonomic hazards

C) Physical hazards

D) Chemical hazards

(Marks: 2)

20. What is a common hazard when working in excavations? (PC9)

A) Slips and trips

B) Cave-ins

C) Equipment noise

D) Chemical exposure

(Marks: 1)

21. Which of the following is a common hazard in confined spaces? (PC9)

A) Fresh air

B) Adequate lighting

C) Toxic gases

D) Open flames

(Marks: 2)

22. What is a common hazard associated with vehicle movement in the workplace? (PC10)

A) Chemical exposure

B) Collisions

C) Electrical shock

D) Falls

(Marks: 2)

23. Which control measure is essential for safe vehicle operation? (PC10)

A) Ignoring maintenance checks

B) Regular vehicle inspections

C) Speeding to complete tasks

D) Using non-compliant vehicle

(Marks: 2)

24. What is a critical element of a pedestrian safety plan? (PC10)

A) Ignoring designated walkways

B) Clearly marked walkways and signage

C) Allowing pedestrians anywhere

D) Reducing visibility

(Marks: 1)

25. What should be done with hazardous substances? (PC11)

A) Store in unmarked containers

B) Follow Material Safety Data Sheet (MSDS) guidelines

C) Mix with other chemicals without knowledge

D) Leave uncovered

(Marks: 2)

26. What is a primary risk of hazardous substances? (PC11)

A) Fire

B) Chemical burns

C) Allergic reactions

D) All of the above

(Marks: 2)

27. What is the purpose of a Safety Data Sheet (SDS)? (PC11)

A) To provide sales information

B) To detail hazard information and safety measures

C) To serve as a marketing tool

D) To ignore safety practices

(Marks: 1)

28. What is a common cause of musculoskeletal disorders (MSDs) in the workplace? (PC12)

A) Poor lighting

B) Repetitive motions

C) High temperatures

D) Excessive noise

(Marks: 2)

29. Which of the following is a key principle of safe manual handling? (PC12)

A) Lift with your back
B) Keep the load away from your body
C) Bend your knees when lifting
D) Carry heavy loads over long distances

(Marks: 2)

30. Which of the following is a common control measure for noise exposure? (PC13)

A) Personal protective equipment (PPE)

B) Increased work hours

C) Minimal ventilation

D) Removing barriers

(Marks: 2)

31. Which of the following is a source of radiation in the workplace? (PC13)

A) Electrical wires
B) X-ray machines
C) Fluorescent lights
D) HVAC systems

(Marks: 2)

32. Which of the following is a common rigging hazard? (PC14)

A) Properly rated equipment

B) Overloading the rigging system

C) Secure load attachment

D) Adequate training

(Marks: 2)

33. What should be inspected before using lifting equipment? (PC14)

A) The colour of the equipment
B) The manufacturer's logo
C) The condition and rating of the equipment
D) The operator's preferences

(Marks: 1)

Section B: Practical Application

(MARKS=40)

Scenario-Based Question

1. Scenario:

(16 marks)

You are conducting a safety audit at a construction site where workers are involved in various activities such as heavy lifting, operating machinery, and working at heights. During your inspection, you observe several conditions that could potentially lead to accidents.

Observation: You notice that some workers are not wearing the required personal protective equipment (PPE), such as helmets and safety goggles. Additionally, a pile of loose debris is located near a busy walkway.

Incident Report: Recently, there was a near miss incident where a worker almost slipped on wet flooring, and another incident involved a non-fatal injury where a worker cut their hand while handling sharp materials.

Questions:

Basic Hazard Identification

Hazard Identification: (PC1)

Based on your understanding of basic definitions, identify the hazards present in this scenario. Classify them as unsafe conditions or unsafe acts.

(Marks=4)

Categories of Hazards:(PC2)

What categories of hazards can you identify from the situation described?

(Marks=2)

Safety Signs and Signals: (PC3)

If you were to recommend safety signs for the construction site, what types of signs would you suggest to address the identified hazards?

(Marks=2)

Hierarchy of Control

Hierarchy of Controls:

Explain the hierarchy of controls in safety.

(Marks=3)

Importance of Controls:

Why is it important to apply the hierarchy of controls when addressing safety issues?

(Marks=3)

Implementation Steps:

Outline the steps you would take to implement the recommended safety measures based on the hierarchy of controls. Include how you would communicate these changes to the workers on-site.

(Marks=2)

2.Scenario: Construction Site Safety Assessment

(24 marks)

You are a safety auditor assigned to conduct a safety assessment at a construction site. During your assessment, you observe several activities and conditions related to various hazard categories. Based on the following situations, identify the hazard category, control measures required, and any additional recommendations.

Situation 1: Electricity and Fire

You notice that several electrical cords are frayed and lying on the ground near a welding station. Workers are using portable heaters without proper fire extinguishers nearby.

Basic Hazard categories and control

PC7. Understand different hazard categories & control: Electricity and Fire.

Question: What hazard categories are present in this situation?

(Marks=3)

PC8. Understand different hazard categories & control: Tools, equipment, and machinery.

A worker is using a power tool without wearing appropriate personal protective equipment (PPE), and there is no machine guarding in place on a nearby piece of machinery.

Question: Identify the hazards related to tools and equipment in this scenario. What controls can be implemented to enhance safety?

(Marks=3)

PC9. Understand different hazard categories & control: Health and workplace hazard - Work at height, confined space, working in an excavation, lone working, and slips & trips.

You observe workers performing tasks at height without harnesses or guardrails. Additionally, a crew is entering a confined space without proper ventilation or monitoring equipment.

Question: What health and workplace hazards are evident here?

(Marks=3)

PC1O. Understand different hazard categories & control: Movement of workforce, Work related driving and vehicles at workplace.

A delivery truck frequently backs up without a spotter, and there are no designated walkways for workers to avoid vehicle traffic.

Question: What are the hazards associated with the movement of workforce and vehicle operations

(Marks=3)

PC11. Understand different hazard categories & control: Hazardous substances.

Chemical containers are stored haphazardly without labels or Safety Data Sheets (SDS). Workers handling these chemicals are not wearing any protective gear.

Question: Identify the hazards related to hazardous substances. What controls should be put in place to ensure worker safety?

(Marks=3)

PC12. Understand different hazard categories & control: Musculoskeletal disorders, manual handling, and load handling equipment.

Workers are lifting heavy materials without using proper lifting techniques or mechanical aids, leading to potential strain injuries.

Question: What musculoskeletal hazards are present? Suggest appropriate control measures for manual handling.

(Marks=3)

PC13. Understand different hazard categories & control: Noise, vibration, radiation, mental ill- health, violence at work, substance abuse at workplace.

The construction site is very noisy due to machinery operations, and several workers have expressed feeling stressed and overwhelmed due to long hours and high demands.

Question: Discuss the hazards of noise and mental health in this environment. What control measures can be implemented to address these issues?

(Marks=3)

PC14. Understand different hazard categories &control: Lifting and Rigging hazards and control

During a lift, the rigging equipment appears worn, and workers are not following proper signalling protocols.

Question: Identify the hazards associated with lifting and rigging. What steps should be taken to ensure safe practices?

(Marks=3)

SSD/VSQ/NO114: **Risk Score Evaluation of Hazards**

Safety Auditor Certification Assessment Paper

Total Marks: 100

Time: 2 Hours

Section A: Multiple Choice Questions (MCQs)

(MARKS=42)

Risks and objective of risk assessments

1. What is the risk? (PC1)
A) A guaranteed outcome

B) The chance of something bad happening.

C) A safe investment.

D) A positive opportunity

(2 marks)

2. What is the primary objective of a risk assessment? (PC1)

A) To eliminate all risks

B) To identify and evaluate risks

C) To reduce costs

D) To increase productivity

(2 marks)

3. What does HIRA stand for? (PC2)

A) Hazard Identification and Risk Analysis

B) Hazard Investigation and Risk Assessment

C) Health and Impact Risk Analysis

D) High Impact Risk Assessment

(2 marks)

4. What is the main purpose of HIRA? (PC2)
A) To increase workplace hazards
B) To identify and assess risks to ensure safety
C) To reduce employee training
D) To ignore potential dangers

(2 marks)

5.What does "likelihood" measure in hazard assessment? (PC3)
A) The impact of a hazard
B) The probability of a hazard occurring
C) The cost of a hazard
D) The duration of a hazard

(2 marks)

6. What does "severity" refer to when assessing hazards? (PC3)
A) The frequency of occurrence
B) The potential consequences of a hazard
C) The total number of hazards
D) The complexity of a hazard

(2 marks)

Hazard Identification and Risk Assessment (HIRA)

7. What is the first step in the HIRA process? (PC4)

A) Risk evaluation

B) Hazard identification

C) Control implementation

D) Monitoring and review

(2 marks)

8. Who is most vulnerable to injuries caused by unsafe acts in the workplace? (PC4)

A) Experienced workers

B) New employees

C) Managers

D) Office staff

(1 marks)

9. How can poor ergonomics endanger a person's health? (PC5)

A) It promotes better posture

B) It reduces physical strain

C) It can lead to chronic pain and injury

D) It increases productivity

(2 marks)

10. How can slippery floors lead to an accident? (PC5)

A) They cause confusion

B) They make it difficult to walk

C) They distract employees

D) They create noise

(1 marks)

11.What is the first step in carrying out a risk assessment? (PC6)

A) Develop a risk matrix
B) Identify hazards
C) Evaluate risks
D) Implement control measures

(1 marks)

12. What is the primary purpose of a risk matrix? (PC6)

A) To create a safety manual
B) To prioritize risks based on likelihood and severity
C) To track employee performance
D) To reduce paperwork

(2 marks)

13. What is the most effective way to eliminate a hazard? (PC7)

A) Administrative controls

B) Substitution

C) Elimination

D) Personal protective equipment (PPE)

(2 marks)

14. What is the significance of following the hierarchy of controls? (PC7)

A) It simplifies training requirements

B) It ensures compliance with regulations

C) It maximizes the effectiveness of safety measures

D) It eliminates the need for ongoing safety assessments

(1 marks)

Hierarchy and Process Safety

15. What is the primary role of management in an organization regarding safety? (PC8)

A) To enforce safety rules

B) To provide resources and support for safety initiatives

C) To conduct all safety training

D) To write safety policies

(2 marks)

16. What is the focus of a safety executive in an organization? (PC8)

A) Managing the budget

B) Developing and implementing safety policies

C) Performing routine inspections

D) Training all employees

(1 marks)

17. What is the primary goal of process safety? (PC9)

A) Increase productivity

B) Minimize operational costs

C) Prevent accidents and incidents involving hazardous processes

D) Enhance employee morale

(2 marks)

18. LOPA stands for (PC9)

A) Layers of Process Analysis

B) Layers of Protection Analysis

C) Levels of Process Assessment

D) Legal Operations and Process Automation

(1 marks)

19. What is a work permit? **(PC1O)**

A) A document allowing a contractor to work without supervision
B) A safety authorization for specific tasks
C) A license to operate machinery
D) An employment agreement

(2 marks)

20. Who is typically considered the controller of premises? **(PC1O)**

A) The facility manager
B) The employees
C) The safety committee
D) The clients

(1 marks)

21. What is a critical prerequisite when selecting a contractor for a project? (PC11)

A) Their previous clients
B) Their safety record and compliance history
C) The colour of their company logo
D) Their social media presence

(2 marks)

22.What is a common gap in contractor safety implementation? (PC11)

A) Overly stringent regulations
B) Lack of training and awareness
C) High costs of safety equipment
D) Excessive paperwork

(1 marks)

23. Why is employee involvement crucial in HIRA? (PC12)

A) It is not important

B) They can identify hazards in their work areas

C) They don't know the risks

D) It increases costs

(2 marks)

24. When conducting a risk assessment, which of the following factors is NOT typically considered?
(PC12)

A) Severity of potential harm
B) Likelihood of occurrence
C) Employee job satisfaction
D) Existing control measures

(2 marks)

25. What is the final step after completing a HIRA for any scenario? (PC12)

A) Reviewing employee performance
B) Implementing control measures and monitoring effectiveness
C) Documenting financial costs
D) Celebrating completion with a team event

(2 marks)

Section B: Practical Application

(MARKS=28)

Risks and objective of risk assessments

PC1

Scenario: A facility manager is preparing for a risk assessment in a warehouse that handles heavy lifting and machinery operations. The team is using a 5x5 risk matrix to evaluate risks.

Question: If the team assesses that the likelihood of an employee suffering a back injury due to improper lifting techniques is "4" (Likely) and the severity of the injury is rated as "3" (Moderate), what is the overall risk rating, and what should be the primary objective of addressing this risk?

A) Overall risk rating is 7; the objective is to improve employee morale.

B) Overall risk rating is 12; the objective is to ensure compliance with safety regulations.

C) Overall risk rating is 10; the objective is to reduce the number of employees.

D) Overall risk rating is 8; the objective is to increase productivity

(MARKS=2)

PC2

Scenario: During a Hazard Identification and Risk Assessment (HIRA) process, a chemical plant identifies several potential hazards, including leaks and exposure to toxic substances. The safety officer is reviewing the statutory requirements relevant to their operations.

Question: Which of the following statutory requirements should the safety officer prioritize when conducting the HIRA for chemical exposure?

A) Only company internal policies

B) Compliance with local environmental and safety regulations

C) Marketing strategies for the chemical products

D) Employee opinions on safety measures

(MARKS=2)

PC3

Scenario: An office is conducting a risk assessment to evaluate the potential hazards associated with office equipment, such as printers and copiers. The team assesses that the likelihood of employees experiencing minor cuts from sharp edges of equipment is "3" (Possible), while the severity of those cuts is rated as "2" (Minor).

Question: Based on this assessment, what should be the team's focus regarding the likelihood and severity of this hazard?

A) Implement a complex training program for employees

B) Provide first aid kits and ensure they are easily accessible

C) Ignore the risk since it is rated as low

D) Replace all office equipment with new models

(MARKS=2)

Hazard Identification and Risk Assessment (HIRA)

Scenario-Based Question

Scenario: A construction site is preparing to conduct a HIRA for a new project involving heavy machinery, scaffolding, and electrical work. The site manager has identified potential hazards, including falls from height, equipment malfunctions, and electrical shocks. The team is tasked with assessing these hazards.

Identify Vulnerable Persons: (PC4)

The team realizes that several groups may be vulnerable to these hazards. Who are the primary individuals that should be considered in this assessment?

A) Only the site manager

B) All construction workers, site visitors, and maintenance staff

C) Only the administrative staff

D) Only the equipment operators

(MARKS=2)

Analyse Likelihood and Severity: (PC5)

The team assesses that the likelihood of a fall from scaffolding is "4" (Likely) and the severity of such an incident is rated as "5" (Catastrophic). How can this hazard potentially lead to an accident or endanger a person's life?

A) It could lead to minor bruises, which do not require attention.

B) It could cause serious injuries or fatalities, significantly impacting workers' health and safety.

C) It would only result in equipment damage, not affecting personnel.

D) It would delay project completion but would not endanger lives.

(MARKS=2)

Carry Out Risk Assessment and Prepare Risk Matrix: (PC6)

With the identified risks, the team uses a risk matrix to evaluate the fall hazard. If they determine the overall risk rating for falls to be "20" (calculated from likelihood 4 and severity 5), what action should they take next regarding risk management?

A) Document the risk and take no further action.

B) Prioritize mitigation strategies, as the risk rating indicates a high level of concern.

C) Increase the number of workers on-site to monitor the situation.

D) Delay the project until further assessments are completed.

(MARKS=2)

Suggest Corrective Actions Following Hierarchy of Control: (PC7)

Based on the identified risks and their high ratings, the team decides to implement corrective actions. Which of the following actions aligns with the hierarchy of controls to effectively manage the risk of falls?

A) Provide personal protective equipment (PPE) like helmets and harnesses.

B) Ensure proper training and supervision of workers using scaffolding.

C) Use engineering controls by installing guardrails and safety nets on scaffolding.

D) Post warning signs about the hazards.

(MARKS=2)

Hierarchy and Process Safety

Scenario: A large manufacturing company is preparing to launch a new production line that involves high-risk processes and the engagement of several contractors for specialized tasks. The company's management team, including the safety manager and safety officers, is meeting to discuss safety protocols and contractor management.

Understanding Roles (PC8):

During the meeting, the safety manager emphasizes the importance of collaboration among different roles in the organization. What is the primary responsibility of the safety officer in this context?

A) To oversee financial budgeting for safety equipment

B) To ensure compliance with safety regulations and conduct safety audits

C) To manage employee performance reviews

D) To handle all external communications

(MARKS=2)

Fundamentals of Process Safety (PC9):

The safety engineer discusses the implementation of process safety management (PSM) principles and mentions using methods like Layer of Protection Analysis (LOPA). What is the purpose of LOPA in this context?

A) To identify financial risks associated with production

B) To evaluate the adequacy of existing safety layers and controls

C) To determine employee satisfaction levels

D) To create marketing strategies for the new production line

(MARKS=2)

Role of Occupier and Contractors (PC10):

The management team identifies that the occupier has specific responsibilities regarding contractor safety. Which of the following is a key responsibility of the occupier?

A) To ensure contractors are paid on time

B) To provide necessary safety training and work permits for contractors

C) To manage contractor performance evaluations

D) To oversee all marketing efforts related to contractor services

(MARKS=2)

Contractor Management and Safety Committees (PC11):

As part of the contractor management process, the safety manager discusses the need for regular review meetings. What should be the primary focus of these meetings?

A) To discuss contractor billing and payments

B) To review safety performance, address concerns, and ensure compliance with safety procedures

C) To plan company social events

D) To evaluate the marketing strategies of contractors

(MARKS=2)

Scenario: Manufacturing Plant Equipment Failure (PC12)

Question: In a manufacturing plant, a critical piece of machinery has a history of frequent breakdowns. What steps should be taken to assess the risks associated with equipment failure, and how can preventive maintenance be integrated into the risk management plan?

Section C: Project Work

(MARKS=30)

1. Identify the hazard and risk in excavation for gas pipeline laying and Calculate Risk of different Hazard.

     (10 Marks)

2. Prepare a HIRA for Excavation for gas pipeline laying Activity.

     (10 Marks)

3. What kind of clearance and work permit is required for excavation for gas pipeline laying

     (10 Marks)

SSD/VSQ/NO115: **Safety Audit Report Preparation**

Safety Auditor Certification Assessment Paper

Total Marks: 100

Time: 2 Hours

Safety Audit inspection scope and audit management

Section A: Multiple Choice Questions (MCQs)

(MARKS=48)

1. What is the primary difference between a safety audit and a safety inspection? (PC1)

A) Safety audits are informal; inspections are formal.

B) Safety audits evaluate the entire system, while inspections focus on specific areas.

C) Safety audits are conducted monthly; inspections are conducted annually.

D) There is no difference.

(MARKS=2)

2. What is the primary purpose of a safety inspection? (PC1)

A) To evaluate compliance with legal standards

B) To identify hazards and ensure safety procedures are followed

C) To create a detailed report for management

D) To train employees on safety measures

(MARKS=2)

3. A health and safety audit typically assesses: (PC1)

A) The physical condition of equipment

B) Compliance with health and safety policies

C) Employee performance

D) Incident reports only

(MARKS=1)

4. Which of the following is typically included in the scope of a Health and Safety audit? (PC2)

A) Personal performance evaluations

B) Compliance with legal and regulatory requirements

C) Sales targets

D) Marketing campaigns

(MARKS=2)

5. Health and Safety management systems are designed to: (PC2)

A) Focus solely on accident reporting

B) Systematically manage workplace health and safety risks

C) Increase production speed

D) Enhance employee job satisfaction

(MARKS=2)

6. Which of the following is a common framework used in Health and Safety management systems? (PC2)

A) ISO 9001

B) ISO 14001

C) ISO 45001

D) ISO 50001

(MARKS=1)

7. Which of the following statements is true regarding auditors' responsibilities? (PC3)

A) Auditors must implement safety measures.

B) Auditors must maintain objectivity and independence.

C) Auditors are not responsible for reporting findings.

D) Auditors can ignore safety standards.

(MARKS=2)

Scrutiny of Documents in safety audit.

8. What is the primary purpose of a Safety Policy in an organization? (PC4)

A) To increase productivity

B) To outline safety goals and responsibilities

C) To reduce costs

D) To improve employee morale

(MARKS=2)

9. What is the primary purpose of the Statement of Intent in a safety policy? (PC4)

A) To specify safety procedures

B) To communicate the organization's commitment to health and safety

C) To list individual safety responsibilities

D) To provide financial projections

(MARKS=2)

10. A positive safety culture in an organization typically includes: (PC4)

A) Punitive measures for safety violations

B) Open communication about safety concerns

C) Minimal employee involvement in safety discussions

D) Strict adherence to rules without feedback

(MARKS=2)

11. SOP stands for: (PC5)

A) Standard Operating Procedure

B) Safety Operation Plan

C) Standard Organizational Policy

D) Safety Oversight Program

(MARKS=2)

12. Which of the following documents is essential for ensuring adherence to safety regulations? (PC5)

A) Absence data

B) Legal compliance records

C) Training records

D) Meeting minutes

(MARKS=2)

13. Accident and incident records are used to: (PC5)

A) Blame employees for mistakes

B) Identify trends and areas for improvement in safety practices

C) Increase productivity

D) Determine employee bonuses

(MARKS=2)

14. IS 14489:1998 refers to: (PC6)

A) Guidelines for marketing strategies

B) Code of practice on occupational safety and health audit

C) Financial auditing standards

D) Quality management systems

(MARKS=2)

15. What is the primary purpose of IS 14489:1998? (PC6)

A) To provide guidelines for financial auditing

B) To establish a framework for conducting occupational safety and health audits

C) To outline employee performance evaluations

D) To set marketing standards

(MARKS=2)

16. Which of the following is a key component of the audit process as per IS 14489:1998? (PC6)

A) Employee interviews

B) Financial record analysis

C) Marketing strategy review

D) Customer feedback collection

(MARKS=2)

17. Minutes of meetings should ideally include: (PC7)

A) Personal anecdotes from attendees

B) Decisions made and action items

C) Unrelated topics discussed

D) Feedback forms

(MARKS=2)

18. A Safe System of Work is primarily intended to: (PC7)

A) Enhance productivity without regard for safety

B) Ensure tasks are performed safely and efficiently

C) Focus exclusively on compliance

D) Promote employee competition

(MARKS=2)

19. What is the primary purpose of conducting interviews during an audit? (PC8)

A) To gather qualitative information and insights

B) To enforce disciplinary actions

C) To train employees

D) To finalize financial statements

(MARKS=2)

20. What should be done before starting an audit interview? (PC8)

A) Review relevant documents and prepare questions

B) Ask the interviewee to leave the room

C) Ignore the audit objectives

D) Focus solely on personal opinions

(MARKS=2)

21. Effective communication in safety culture is essential for: (PC9)

A) Blame-shifting

B) Transparency and trust

C) Reducing employee benefits

D) Increasing production schedules

(MARKS=2)

22. Why are maintenance records important for safety? (PC9)

A) They track employee productivity

B) They ensure equipment is safe and functioning properly

C) They provide data for financial audits

D) They summarize customer feedback

(MARKS=2)

23. Why are previous audit reports valuable? (PC9)

A) They track employee promotions

B) They provide insights into past compliance and areas for improvement

C) They focus on financial performance

D) They summarize customer feedback

(MARKS=1)

24. Who is typically the addressee of an audit report? (PC1O)

A) Only the auditors

B) Senior management and stakeholders

C) The public

D) Customers

(MARKS=2)

25. In the audit report, what does the 'scope' refer to? (PC1O)

A) The duration of the audit

B) The areas and activities covered during the audit

C) The financial aspects being audited

D) The goals of the organization

(MARKS=2)

26. Which of the following is NOT a component of the audit report as per IS 14489:1998? (PC1O)

A) Opinion

B) Audit objectives

C) Employee performance reviews

D) Auditor's responsibility

(MARKS=1)

Section B: Practical Application

(MARKS=32)

Practical Scenario-Based Short Question:

Safety Audit inspection scope and audit management

PC1

Scenario: You are the safety officer at a manufacturing facility. During a recent safety inspection, you noticed that several workers were not wearing the required personal protective equipment (PPE) in a high-risk area. Additionally, the inspection report indicated that safety equipment was poorly maintained. A month later, a safety audit is scheduled.

Question: What steps should you take following the inspection findings before the upcoming safety audit to ensure compliance and improve safety conditions in the facility?

(MARKS=3)

PC2

Scenario: You are part of the health and safety team in a construction company. The organization has recently undergone a major project, and you are preparing for an upcoming health and safety audit. During a preliminary review, you discover that the incident reporting system has several unlogged incidents from the past year, and some employees have not received mandatory safety training.

Question: What actions should you take to address these issues before the health and safety audit to ensure compliance and improve safety management?

(MARKS=3)

PC3

Scenario: You have just completed a health and safety audit for a manufacturing facility. You need to prepare the audit report. As you draft the report, you realize that some sections are not clearly defined, which could confuse the management team.

Question: What key elements should you ensure are included and clearly articulated in your audit report, and why is each element important?
(MARKS=2)

Scrutiny of Documents in safety audit

PC4

Scenario: You are a safety officer at a construction company. Recently, you've noticed an increase in near-miss incidents and a decline in safety training attendance. The company has a Statement of Intent in its safety policy that emphasizes the importance of safety culture, but you feel that the current environment does not fully align with this intent.

Question: What steps would you take to assess and improve the safety culture within the organization? Identify specific positive safety culture indicators you would look for and actions to reinforce them.

(MARKS=4)

PC5

Scenario: You are the safety manager at a manufacturing facility. As part of a comprehensive safety review, you need to gather information from various sources to assess compliance and improve safety management. You have access to the following documents and records: legal compliance reports, absence and sickness data, risk assessments, standard operating procedures (SOPs), monitoring records, both internal and external communication channels, maintenance records, accident and incident reports, health and surveillance records, safety committee meeting minutes, training records, statutory inspection reports, and previous audit reports.

Question: Describe how you would systematically gather and analyse information from these sources to identify areas for improvement in the facility's health and safety management system.

(MARKS=4)

PC6

Scenario: You are a health and safety officer in a medium-sized manufacturing company. The organization has decided to undergo an occupational safety and health audit in accordance with IS 14489:1998 to evaluate its safety management system and ensure compliance with best practices. As part of the audit preparation, you need to ensure that all relevant processes, documentation, and evidence are in place.

Question: Describe the key steps you would take to prepare for the occupational safety and health audit based on IS 14489:1998.

(MARKS=4)

Safety Audit data collection and report preparation

PC7

Scenario -You are the safety manager in a construction company that has recently faced several safety incidents, prompting the need to strengthen safety practices and communication. The management has tasked you with preparing a comprehensive safety policy.

Question

Describe the steps you would take to develop comprehensive safety policy.

(MARKS=3)

PC8

Scenario: You are part of a health and safety audit team in a manufacturing facility. As part of the audit process, you are tasked with conducting interviews with employees at various levels to gather insights about safety practices, compliance with policies, and areas for improvement. You need to ensure that the interviews are structured, effective, and properly documented.

Question
Describe the steps you would take to prepare for and conduct the interviews during the audit.

(MARKS=3)

PC9

Scenario: You are the health and safety officer at a logistics company. As part of an annual safety review, you have been tasked with gathering comprehensive data and information to assess the effectiveness of the current health and safety management system. You need to collect data from various sources, including compliance data, absence and sickness records, standard operating procedures (SOPs), monitoring records, communication logs, maintenance records, accident and incident reports, health and surveillance records, safety committee meeting minutes, inspection reports, and previous audit reports.
Question: Describe the steps you would take to systematically gather and analyse this data.

(MARKS=3)

PC1O

Scenario: You are a safety consultant hired by a large manufacturing company to conduct an occupational safety and health audit in accordance with IS 14489:1998. After completing the audit, you need to prepare a detailed audit report that summarizes your findings, assesses compliance with safety standards, and provides recommendations for improvement. The management team is eager to understand the results and the actions they need to take.
Question: Outline the key components you would include in the audit report based on IS 14489:1998

(MARKS=3)

Section C: Project Work

(MARKS=20)

Safety Audit inspection scope and audit management.
You are a safety auditor tasked with conducting a comprehensive safety audit in a manufacturing facility. Your objective is to assess the effectiveness of the current safety management system and identify areas for improvement.

Question

Define the Scope of the Safety Audit Inspection:

Outline the specific areas, processes, and departments that will be included in the audit.

Describe the criteria and standards you will use to evaluate safety practices.

Identify any legal or regulatory requirements that must be considered during the audit

(MARKS=6)

Scrutiny of Documents in safety audit.

As a safety auditor, you are tasked with conducting a thorough scrutiny of documents during a safety audit for a medium-sized manufacturing organization. Your goal is to assess compliance with safety regulations and the effectiveness of the organization's safety management system.

Question

List the key documents you will review as part of the audit process

(MARKS=7)

Safety Audit data collection and report preparation

As a safety auditor, you are responsible for conducting a safety audit in a construction company. Your primary task is to gather relevant data and prepare a comprehensive audit report based on your findings. Conducting Interviews:(**Question**)

Describe how you will conduct interviews with employees at different levels within the organization.

Prepare a set of interview questions that address safety practices, training, and communication regarding health and safety.

Explain the process for documenting responses and ensuring confidentiality.

(MARKS=7)

SSD/VSQ/NO131: Statutes and Legislative requirements in Health and Safety

Safety Auditor Certification Assessment Paper

Total Marks: 100

Time: 2 Hours

Section A: Multiple Choice Questions (MCQs)

(60 Marks)

1. What does the BOCW Act of 1996 primarily address? (PC1)

A) Environmental Protection

B) Construction Workers' Safety

C) Oil Industry Regulations

(MARKS=2)

2. Under the BOCW Act, who is responsible for ensuring safety measures at construction sites? (PC1)

A) Only the workers

B) The employer and the contractor

C) Government inspectors only

D) The workers' unions

D) Factories Safety

(MARKS=2)

3. According to the BOCW Act, which body is responsible for enforcing compliance with safety regulations? (PC1)

A) Local police

B) Chief Inspector of the State

C) Ministry of Labour and Employment

D) Trade unions

(MARKS=2)

4. What is a consequence of non-compliance with the Factories Act, 1948? (PC2)

A) Increased taxes

B) Legal penalties

C) Improved working conditions

D) Employee promotions

(MARKS=2)

5.Under the Factories Act, which of the following is a key responsibility of the factory manager? (PC2)

A) To provide entertainment facilities for workers

B) To ensure compliance with health and safety regulations

C) To manage financial accounts of the factory

D) To conduct recruitment drives

(MARKS=2)

6. How often must employers conduct safety training according to OSHA standards? (PC3)

A) Only during employee onboarding

B) Annually or as needed based on workplace changes

C) Every five years

D) Training is not mandatory

(MARKS=2)

7. What does the Environment Protection Act, 1986 aim to prevent? (PC4)

A) Worker exploitation

B) Air and water pollution

C) Traffic accidents

D) Natural disasters

(MARKS=2)

8. According to ILO guidelines, what is the role of employers in maintaining EHS standards? (PC4)

A) To provide equipment only

B) To ensure a comprehensive EHS management system is in place

C) To limit expenses related to health and safety

D) To delegate responsibilities to workers

(MARKS=2)

9. What is a key focus of the Oil Industry Safety Directorate (OISD) Guidelines? (PC5)

A) Construction safety

B) Oil spill management

C) Worker compensation

D) Emergency response

(MARKS=2)

10. What is the primary objective of the OSID Guidelines? (PC5)

A) To promote marketing strategies in the oil industry

B) To ensure safety and environmental protection in oil and gas operations

C) To regulate financial transactions in the oil sector

D) To establish labour unions in the oil industry

(MARKS=2)

11. What is the primary purpose of the Mines Vocational Training Rules? (PC6)

A) To regulate the financial performance of mining companies

B) To ensure adequate training and skill development for workers in the mining sector

C) To promote technological advancements in mining equipment

D) To establish marketing strategies for minerals

(MARKS=2)

12. What is the role of the DGMS in relation to the Mines Vocational Training Rules? (PC6)

A) To oversee financial audits of mining companies

B) To ensure compliance with safety and training standards in the mining industry

C) To promote marketing strategies for minerals

D) To provide legal support to mining companies

(MARKS=2)

13. What is the primary objective of the Electricity Act, 2003? (PC7)

A) To regulate telecommunications

B) To ensure the development of the electricity industry and promote competition

C) To control water resources

D) To manage waste disposal

(MARKS=2)

14. Which of the following is a responsibility of the distribution licensee under the Electricity Act, 2003? (PC7)

A) To restrict access to electricity

B) To ensure continuous supply and quality of electricity to consumers

C) To increase tariffs without any regulations

D) To ignore safety standards

(MARKS=2)

15. What does the National Building Code (NBC) – 2016 primarily address? (PC8)

A) Fire safety in buildings

B) Construction standards and safety

C) Energy efficiency

D) Public health regulations

(MARKS=2)

16. The Electricity Act, 2010, primarily focuses on which of the following aspects? (PC8)

A) Financial audits of electricity companies

B) Strengthening regulatory frameworks and improving efficiency in the electricity sector

C) Promoting tourism in power generation areas

D) Reducing employee wages in the electricity sector

(MARKS=2)

17. Which organization provides guidelines for fire safety in workplaces? (PC9)

A) ILO

B) OSHA

C) National Fire Protection Association (NFPA)

D) Ministry of Labour

(MARKS=2)

18. According to NFPA regulations, what is the minimum distance that combustible materials should be stored from heat sources? (PC9)

A) 1 foot

B) 3 feet

C) 5 feet

D) 10 feet

(MARKS=2)

19. What is the primary objective of the Explosives Act of 1884? (PC10)

A) To promote the sale of explosives

B) To regulate the manufacture, storage, transport, and use of explosives

C) To set tariffs on explosives

D) To encourage mining activities

(MARKS=2)

20. What is a primary concern of the PESO regarding the Explosive Act 1884? (PC10)

A) Noise pollution

B) Safe handling of explosives

C) Fire safety in industries

D) Environmental degradation

(MARKS=2)

21. According to PESO, how should explosive waste be disposed of? (PC10)

A) In regular trash

B) Burned in open areas

C) In accordance with hazardous waste regulations

D) No specific disposal methods are needed

(MARKS=1)

22. The Gas Cylinders Rule 2016 primarily governs: (PC11)

A) Transportation of gas

B) Manufacturing of gas

C) Safe storage and handling of gas cylinders

D) Environmental impact of gases

(MARKS=2)

23. What is the primary objective of the Gas Cylinders Rule, 2016? (PC11)

A) To regulate the sale of food products

B) To ensure the safety of gas cylinder handling and storage

C) To control gas prices

D) To promote the use of renewable energy

(MARKS=2)

24. What is the objective of The Boilers Act 1923? (PC12)

A) Regulation of food safety

B) Ensuring safety in boiler operations

C) Guidelines for construction

D) Labour welfare

(MARKS=2)

25. Which authority is responsible for enforcing The Boilers Act, 1923 in India? (PC12)

A) Central Pollution Control Board

B) Boiler Inspectorate

C) Ministry of Power

D) Ministry of Heavy Industries

(MARKS=2)

26. Which of the following is covered under the Workmen's Compensation Act? (PC13)

A) Injury due to negligence of a co-worker

B) Illness unrelated to work

C) Injury sustained during a break

D) All of the above

(MARKS=2)

27. What factors are considered in determining compensation amount? (PC13)

A) Employee's salary and degree of disability

B) Duration of employment

C) Employer's financial status

D) All of the above

(MARKS=2)

28. What is required for a person to drive a motor vehicle legally? (PC14)

A) A valid insurance policy

B) A driving license

C) A vehicle registration certificate

D) All of the above

(MARKS=2)

29. Which Act outlines safety measures for motor vehicles? (PC14)

A) Electricity Act 2010

B) Motor Vehicle Act 1988

C) BOCW Act 1996

D) Mines Act 1952

(MARKS=2)

30. What is the primary objective of first aid in the workplace? (PC15)

A) To provide long-term medical care

B) To preserve life and prevent deterioration of the condition

C) To diagnose illnesses

D) To promote fitness

(MARKS=2)

31. What is the minimum number of trained first aid responders recommended in a workplace? (PC15)

A) One per shift

B) One per 50 employees

C) One per department

D) No specific requirement

(MARKS=2)

Section B: Practical Application Questions

(40 Marks)

1. BOCW Act of 1996 PC1

    Scenario: During a routine inspection, you find that safety measures, such as scaffolding and protective gear, are not adequately implemented at a construction site.

    Question: What specific regulatory obligations under the BOCW Act must be fulfilled to ensure worker safety, and how will you document compliance or non-compliance in the legal register?

(MARKS=2)

2. Factories Act, 1948 PC2

Scenario: An employee reports inadequate ventilation and sanitation facilities in the workplace, leading to health concerns.

Question: What steps should be taken to comply with the Factories Act regarding health and safety, and how will you record your findings and actions in the legal register?

(MARKS=2)

3. OSH Code 2020 & OSHA Compliance PC3

Scenario: Your organization has not conducted a risk assessment for new machinery installed in the workplace.

Question: What are the compliance requirements under the OSH Code and OSHA standards, and how should you update the legal register following the risk assessment

(MARKS=2)

4. Environment Protection Act, 1986 & ILO Guidelines PC4

Scenario: A new project is proposed that may impact local ecosystems.

Question: What environmental assessments must be conducted to comply with the Environment Protection Act and ILO guidelines, and how will you document these assessments in the legal register?

(MARKS=2)

5. Oil Industry Safety Directorate (OSID) Guidelines PC5

Scenario: An oil leak incident occurs, and immediate safety protocols are not followed.

Question: What OSID guidelines apply to this incident, and how should this event and its management be recorded in the legal register?

(MARKS=2)

6. Mines Vocational Training Rules – DGMS PC6

Scenario: A new employee in a mining operation has not completed the required safety training.

Question: What training obligations exist under the DGMS rules, and how will you log this in the legal register to track compliance?

(MARKS=2)

7. Electricity Act 2010 & 2003 PC7

Scenario: An electrical safety audit reveals non-compliance with installation standards.

Question: What actions must be taken to align with the Electricity Act, and how will you reflect these in the legal register?

(MARKS=2)

8. National Building Code (NBC) – 2016 PC8

Scenario: A recent construction project does not meet NBC standards for fire safety exits.

Question: What specific NBC obligations must be rectified, and how will these issues be documented in the legal register?

(MARKS=2)

9. National Fire Protection Association Regulations PC9

Scenario: A fire drill was not conducted as per NFPA guidelines, raising safety concerns among employees.

Question: What compliance actions are necessary, and how will you update the legal register to reflect this?

(MARKS=2)

10. PESO – Explosive Act 1884 PC10

Scenario: A storage facility for explosives is found to lack proper licensing.

Question: What steps must be taken to comply with the Explosive Act, and how will you document the licensing status in the legal register?

(MARKS=2)

11. Gas Cylinders Rule 2016 PC11

Scenario: An employee reports improper storage practices for gas cylinders.

Question: What regulatory requirements need to be met, and how will you record the findings and corrective actions in the legal register?

(MARKS=2)

12. The Boilers Act 1923 PC12

Scenario: A boiler is due for its routine inspection, but no records are available.

Question: What actions must be taken to comply with the Boilers Act, and how should you document this situation in the legal register?

(MARKS=2)

13. Workmen Compensation Act 1923 & Employee State Insurance Act 1948 PC13

Scenario: An employee has filed a compensation claim following an injury at work.

Question: What processes must be followed to ensure compliance with these acts, and how will you document the claim in the legal register?

(MARKS=2)

14. Motor Vehicle Act 1988 PC14

Scenario: A company vehicle is involved in an accident, and the driver lacks a valid license.

Question: What actions must be taken to address this violation of the Motor Vehicle Act, and how will you record this incident in the legal register?

(MARKS=2)

First Aid at Workplaces PC15

16. Scenario: An employee has an accident and first aid is not readily available.

Question: What are the compliance requirements regarding first aid provisions, and how should you document this incident and your response in the legal register?

(MARKS=2)

ASSESSMENT CRITERIA

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- **SSD/VSQ/NO116:** Plan, Organize & Monitor

  Safety Auditor Certification Assessment Paper

  Total Marks: 100

  Time: 2 Hours

  Section A: Multiple Choice Questions (MCQs)

  (60 Marks)

  Planning of Work

  1. What is the first step in planning safety resources for a work task? (PC1)

  A) Gathering feedback from team members

  B) Reviewing the overall work timelines and objectives

  C) Conducting a financial audit

  D) Allocating tasks to subordinates

  (MARKS=2)

  2. What is the primary purpose of resource planning? (PC1)

  A) To allocate tasks to employees

  B) To minimize costs

  C) To ensure resources are available when needed

  D) To increase profit margins

  (MARKS=2)

  3. Which document typically outlines the project schedule? (PC1)

  A) Project charter

  B) Statement of work

  C) Project management plan

  D) Risk management plan

  (MARKS=2)

  4. Which term describes the resources needed to complete a project? (PC1)

  A) Resource pool

B) Resource allocation

C) Resource capacity

D) Resource requirement

(MARKS=2)

5. What is the primary focus of a project kick-off meeting? (PC1)

A) To assign tasks

B) To establish timelines and milestones

C) To discuss budget constraints

D) To review past projects

(MARKS=2)

6. Which of the following is a key responsibility of a project scheduler? (PC1)

A) Conducting market research

B) Designing project deliverables

C) Developing and maintaining the project timeline

D) Managing stakeholder communication

(MARKS=2)

7. Why is it important to understand the organizational hierarchy? (PC2)

A) To improve personal relationships

B) To facilitate communication and reporting

C) To increase sales

D) To reduce employee turnover

(MARKS=2)

8. What is organizational hierarchy? (PC2)

A) A list of employee names

B) The structure that outlines how tasks are distributed and coordinated

C) A system for tracking employee performance

D) A method for scheduling meetings

(MARKS=2)

9. What is the primary benefit of a clear organizational hierarchy? (PC2)

A) Increased complexity

B) Clear communication channels and defined roles

C) More employees needed

D) Higher operational costs

(MARKS=2)

10. Which of the following is essential for effective communication with subordinates and superiors during task planning? (PC3)

A) Keeping all communication verbal only

B) Using clear and concise language

C) Delegating all communication to a single person

D) Communicating only at the end of the project

(MARKS=2)

11. What is the first step in assigning tasks to subordinates? (PC3)

A) Creating a budget

B) Identifying project goals and objectives

C) Choosing team members

D) Setting deadlines

(MARKS=2)

12. What does SMART stand for in the context of setting tasks? (PC3)

A) Simple, Measurable, Achievable, Relevant, Time-bound

B) Specific, Measurable, Achievable, Relevant, Time-bound

C) Standard, Measurable, Achievable, Realistic, Timely

D) Specific, Meaningful, Achievable, Relevant, Tangible

(MARKS=2)

Organizing of Work

13. What is the primary purpose of resource collection in project management? (PC4)

A) To allocate tasks

B) To gather necessary materials and inputs

C) To create budgets

D) To schedule meetings

(MARKS=2)

14. What is the first step in resource collection? (PC4)

A) Allocation of resources

B) Identifying resource needs

C) Distribution of resources

D) Evaluation of resources

(MARKS=2)

15. What is the first step in the resource provisioning process? (PC4)

A) Allocating resources

B) Identifying resource requirements

C) Monitoring resource usage

D) Reporting resource status

(MARKS=2)

16. What is the best way to ensure your message is understood by co-workers? (PC5)

A) Use technical jargon

B) Keep the message concise and clear

C) Avoid summarizing key points

D) Speak quickly

(MARKS=2)

17. What is active listening? (PC5)

A) Hearing without responding

B) Engaging fully with the speaker and providing feedback

C) Thinking about your response while the other person speaks

D) Ignoring distractions

(MARKS=2)

18. When communicating with superiors, it is important to: (PC5)

A) Use casual language

B) Be concise and respectful

C) Share all personal opinions

D) Avoid presenting data

(MARKS=2)

19. What is the primary purpose of a briefing? (PC6)

A) To create confusion

B) To provide clear and concise information about tasks

C) To assign blame for past issues

D) To delay project timelines

(MARKS=2)

20. Why is it necessary to brief subordinates on their roles and responsibilities in a safety plan? (PC6)

A) To ensure tasks are understood and completed effectively

B) To delegate the planning process to others

C) To reduce the number of tasks

D) To avoid responsibility for the project

(MARKS=2)

21. What is the main goal of a briefing? (PC6)

A) To motivate employees

B) To inform about tasks and expectations

C) To establish authority

D) To collect opinions

(MARKS=2)

Monitoring of Work

22. What role does leadership play in monitoring work? (PC7)

A) It is irrelevant

B) It sets the tone for accountability and support

C) It complicates processes

D) It should be avoided

(MARKS=2)

23. What is the primary purpose of monitoring progress in a project? (PC7)

A) To assign blame for delays

B) To ensure tasks are completed on time and within budget

C) To ignore issues as they arise

D) To complicate project management

(MARKS=2)

24. Which of the following is a key indicator of project progress? (PC7)

A) Employee satisfaction

B) Milestone completion

C) Office atmosphere

D) Social media engagement

(MARKS=2)

25. What is the main purpose of reporting to superiors? (PC8)

A) To fill out paperwork

B) To inform and update

C) To avoid accountability

D) To impress peers

(MARKS=2)

26. What is a critical element of effective communication when reporting? (PC8)

A) Using jargon

B) Clarity and conciseness

C) Avoiding details

D) Ignoring feedback

(MARKS=2)

27. How can you ensure that other teams are kept informed? (PC8)

A) By sending updates only when they ask

B) By establishing regular communication channels

C) By limiting communication to formal meetings

D) By ignoring their needs

(MARKS=2)

28. What is the primary purpose of documentation in a project? (PC9)

A) To create confusion

B) To provide a clear record of processes and decisions

C) To complicate project management

D) To assign blame for mistakes

(MARKS=2)

29. What is a compliance audit? (PC9)

A) An informal review of team performance

B) A systematic examination to ensure adherence to regulations and standards

C) A casual discussion among team members

D) A method of performance appraisal

(MARKS=2)

30. What is the importance of accurate data in compliance reports? (PC9)

A) It is not significant

B) It supports informed decision-making and accountability

C) It complicates the reporting process

D) It creates misunderstandings

(MARKS=2)

Section B: Practical Application

(40 Marks)

Planning of Work

PC1

Scenario: Project Launch for a New Software Application

You are the project manager for the development and launch of a new software application aimed at streamlining workflow for remote teams. Your superiors have provided the following work timelines and resources:

- o Project Duration: 6 months
- o Key Milestones:
- o Requirements Gathering: 4 weeks
- o Design Phase: 6 weeks
- o Development Phase: 12 weeks
- o Testing Phase: 8 weeks

- o   Launch Preparation: 4 weeks
- o   Team Members:
- o   1 Project Manager (you)
- o   2 Developers
- o   1 UX/UI Designer
- o   1 QA Tester
- o   Budget Constraints

Available Tools: Project management software, communication tools, and testing platforms.

Question:

Risk Management: Identify at least three potential risks that could affect the project timeline and propose mitigation strategies for each.

(MARKS=8)

PC2

Scenario: Cross-Departmental Collaboration for a Marketing Campaign

You are part of the marketing team in a mid-sized tech company. Your manager has tasked you with leading a cross-departmental campaign that requires collaboration with the sales and product development teams. You need to ensure clear communication among all parties, including your direct reports and higher management.

- o   Organizational Hierarchy:
- o   CEO
- o   VP of Marketing (your manager)
- o   Marketing Team (you and 3 team members)
- o   Sales Team (led by a Sales Manager)
- o   Product Development Team (led by a Product Manager)

Question:

Hierarchy Navigation: How would you identify the key stakeholders from each department that need to be involved in the campaign? What steps would you take to understand their roles and responsibilities within the project?

- o   Communication Strategy: Develop a communication plan that includes:
- o   Key messages you need to convey to each team.
- o   How you would ensure that everyone understands their tasks and deadlines.
- o   Methods for gathering feedback and addressing concerns.

(MARKS=4)

PC3

Scenario: Launching a New Product Line

You are the team leader in charge of launching a new product line for your company. The launch is scheduled for three months from now, and you have a team of four subordinates with different skill sets. The key tasks and timelines for the project are as follows:

- o   Project Timeline:
- o   Market Research: 3 weeks

- o Product Development: 6 weeks
- o Marketing Strategy Development: 4 weeks
- o Testing and Feedback: 2 weeks
- o Final Launch Preparation: 3 weeks
- o Team Members:
- o Alice: Market Research Specialist
- o Bob: Product Developer

Cathy: Marketing Strategist

David: QA Tester

Question:

Task Assignment: How would you assign tasks to each team member based on their skills and the project timeline? Include specific deadlines for each task.

(MARKS=4)

Organizing of Work

Scenario: Developing a New Marketing Campaign

You are the project manager for a new marketing campaign aimed at launching a product. The campaign is set to run over the next two months, and you need to ensure effective resource collection, communication with your team and superiors, and thorough briefing for your subordinates.

- o Key Components:
- o Budget: $50,000
- o Timeline: 8 weeks
- o Team Members:
- o Marketing Strategist
- o Graphic Designer
- o Social Media Specialist
- o Copywriter
- o Task Breakdown:
- o Research and Analysis: 2 weeks
- o Creative Development: 3 weeks
- o Execution and Monitoring: 3 weeks

Question:

PC4

Resource Collection and Provisioning: How would you identify and gather the necessary resources (e.g., budget, tools, materials) for each phase of the campaign? List the resources required for each task and how you would acquire them.

(MARKS=4)

PC5

Communication with Co-workers and Superiors: Outline your approach to keeping both your team and upper management informed throughout the project. What tools or methods will you use to communicate updates, progress, and any challenges faced?

(MARKS=4)

PC6

Briefing Subordinates: How would you conduct a briefing session with your team to explain the project's schedule, sequence of tasks, timing, and resources? Include key points you would cover in the briefing and how you would ensure that everyone understands their roles.

(MARKS=4)

Monitoring of Work

Scenario: Launching a New Software Feature

You are the project manager responsible for the development and launch of a new feature for your company's software product. The project is set to take three months, and you have a team of five subordinates working on different aspects of the feature.

- o   Key Components:
- o   Project Timeline: 12 weeks
- o   Team Members:
- o   2 Software Developers
- o   1 UI/UX Designer
- o   1 QA Tester
- o   1 Product Owner
- o   Major Tasks:
- o   Requirements Gathering: 3 weeks
- o   Design Phase: 2 weeks
- o   Development Phase: 5 weeks
- o   Testing Phase: 2 weeks

Question:

PC7

Monitoring Progress: How will you monitor the progress of work throughout the project? Describe the tools and methods you will use to track milestones and ensure that resources are being managed effectively.

(MARKS=4)

PC8

Reporting to Superiors: Outline your approach to reporting progress to your superiors. What key metrics or information will you include in your reports, and how often will you provide updates?

(MARKS=4)

PC9

Documentation and Compliance: What steps will you take to ensure that all project documentation is thorough and compliant with company standards? Describe the types of documentation you will maintain and how you will handle report submissions.

(MARKS=4)

DGT/VSQ/NO1O2: Employability Skills (6O Hours)

Safety Auditor Certification Assessment Paper

Total Marks: 50

Time: 2 Hours

Section A: Multiple Choice Questions (MCQs)

(2O Marks)

1. What is an employability skill? (Introduction to Employability Skills)

A) A technical skill required for a specific job

B) A general skill applicable to many jobs

C) A skill only learned through formal education

D) A skill related to personal interests

(MARKS=1)

2. What is the primary goal of sustainable development? (Constitutional values – Citizenship)

A) Economic growth

B) Environmental protection

C) Social equity

D) All of the above

(MARKS=1)

3. Self-awareness in a professional context means: (Becoming a Professional in the 21st Century)

A) Knowing your personal likes and dislikes

B) Understanding your strengths and weaknesses

C) Ignoring feedback from others

D) Focusing solely on technical skills

(MARKS=2)

4. What is a common greeting when you meet someone? (Basic English Skills)

A) Goodbye

B) Hello

C) See you later

D) Sorry

(MARKS=2)

5. What is the difference between a job and a career? (Career Development & Goal Setting)

A) A job is temporary; a career is long-term

B) There is no difference

C) A career is only in management

D) A job pays more than a career

(MARKS=1)

6. What is the primary goal of active listening? (Communication Skills)

A) To respond immediately
B) To fully understand the speaker's message
C) To critique the speaker's ideas
D) To take notes for later reference

(MARKS=2)

7. What is the role of the POSH Act in the workplace? (Diversity & Inclusion)

A) Regulating salaries

B) Addressing issues related to sexual harassment

C) Managing employee attendance

D) Enforcing dress codes

(MARKS=1)

8. Which tax type is typically deducted from an employee's salary? (Financial and Legal Literacy)

A) Property tax

B) Sales tax

C) Income tax

D) Capital gains tax

(MARKS=2)

9. What is the primary function of a spreadsheet? (Essential Digital Skills)

A) To create documents

B) To organize and analyse data

C) To make presentations

D) To send emails

(MARKS=1)

10. Which of the following is NOT a feature of word processing software? (Essential Digital Skills)

A) Spell check

B) Formulas

C) Text formatting

D) Page layout

(MARKS=2)

11. What does the 'P' in the 4Ps of Marketing stand for? (Entrepreneurship)

A) Product

B) Process

C) Profit

D) People

(MARKS=2)

12. What is the primary goal of customer service? (Customer Service)

A) To sell more products

B) To satisfy customer needs and enhance experience

C) To increase prices

D) To decrease staff

(MARKS=1)

13. What is the purpose of a Curriculum Vitae (CV)? (Getting ready for apprenticeship & jobs)

A) To summarize educational background and work experience

B) To provide personal anecdotes

C) To list hobbies only

D) To impress friends

(MARKS=2)

Section B: Practical Application

(3O Marks)

Scenario Based

Employability Skills, Constitutional values, Professionalism, English Skills, Career Development & Goal Setting

1. You are part of a diverse team working on a community project aimed at promoting local civic engagement. During a team meeting, you notice that a few members are struggling to communicate their ideas clearly, and there seems to be a misunderstanding about the project's goals. Additionally, you sense that some team members are not fully aware of the constitutional values of equality and justice that underpin the project's mission. As a leader in the group, you want to foster professionalism, ensure effective communication, and help everyone set personal goals for their contributions.

   Question: How would you address the communication issues within the team, ensure everyone understands the constitutional values relevant to the project, promote professionalism, and assist team members in setting their individual goals for the project? Provide specific actions you would take.

   (MARKS=11)

Communication Skills, Diversity & Inclusion, Financial and Legal Literacy, Essential Digital Skills

   Scenario: You are part of a project team tasked with developing a new online platform aimed at providing financial literacy resources to underserved communities. Your team consists of members from diverse backgrounds, each bringing unique perspectives. During the initial meetings, you notice that not everyone is participating equally, and some team members struggle to communicate their ideas effectively. Additionally, the project must comply with legal standards, and there's a need for everyone to understand financial concepts and digital tools to create the platform.

Question: As the team leader, how would you facilitate inclusive communication among team members to ensure everyone's voice is heard? What specific strategies would you implement to enhance financial and legal literacy within the group? Finally, how would you leverage essential digital skills to ensure the project is successful? Provide specific actions you would take.

(MARKS=11)

Entrepreneurship, Customer Service, apprenticeship & jobs

1. **Scenario:** You are an apprentice at a start-up that specializes in eco-friendly products. Recently, you've noticed that customer feedback indicates some dissatisfaction with the current product line and the responsiveness of the customer service team. As part of your role, you're encouraged to think like an entrepreneur and suggest improvements. You also want to ensure that your fellow apprentices understand the importance of excellent customer service in driving business success.

   Question: How would you approach the situation to gather and analyze customer feedback effectively? What entrepreneurial strategies would you propose to enhance the product offerings and customer service experience? Additionally, how would you communicate the importance of these improvements to your fellow apprentices to foster a culture of proactive customer service within the team? (MARKS=8)

   Model: 02

   ## <u>NOS-SSD/VSQ/N0113:</u> Concept of Safety Audit, Need, Scope and Methodologies of safety audit

   Safety Auditor Certification Assessment Paper

   Total Marks: 100

   Time: 2 Hours

   <u>Section A</u>: Multiple Choice Questions (MCQs)

   (Marks-60)

   Concept of Safety Audit

   1. Which of the following is NOT a requirement of a safety audit?

   A) Documentation review

   B) Employee interviews

   C) Financial forecasting

   D) Site inspections

   (Marks: 2)

   2. What is a common outcome of a safety audit?

   A) Increased employee turnover

   B) Identification of safety hazards

   C) Enhanced customer loyalty

   D) Improved sales figures

(Marks: 2)

3. Which of the following standards may guide safety audits? (PC1)

A) ISO 9001

B) ISO 14001

C) ISO 45001

D) All of the above

(Marks: 2)

4. How can an auditor avoid "window dressing" in their findings? (PC2)

A) Focusing on personal relationships

B) Conducting thorough and objective evaluations

C) Ignoring minor issues

D) Relying on self-reported data

(Marks: 2)

- 5. Safety auditors are responsible for which of the following? (PC2)
- A) Ignoring safety violations
- B) Conducting audits and reporting findings
- C) Promoting unsafe practices
- D) Implementing all safety measures themselves

  (Marks: 2)

6. What is one ethical responsibility of an auditor during a safety audit? (PC2)

A) To prioritize speed over accuracy

B) To report only positive outcomes

C) To maintain confidentiality of findings

D) To influence management decisions

(Marks: 2)

7. Reconciliation in a safety audit is used to: (PC3)

A) Compare safety policies with actual practices

B) Analyse financial records

C) Evaluate employee performance

D) Conduct market research

(Marks: 2)

8. Flow charts in safety audits are used primarily for: (PC3)

A) Documenting financial transactions

B) Visualizing safety processes and identifying risks

C) Tracking employee attendance

D) Managing customer feedback

(Marks: 2)

9. Which audit technique involves physically checking equipment and facilities? (PC3)

A) Scanning

B) Testing

C) Inquiry

D) Verification

(Marks: 2)

Safety Audit Process and Stages

- 10. During the opening meeting of a safety audit, who typically participates? (PC4)
- A) Only the auditor
- B) Management and audit team
- C) Only employees
- D) External stakeholders

    (Marks: 2)

- 11. Which of the following is a common safety audit methodology? (PC4)
- A) SWOT analysis
- B) Lean manufacturing
- C) Plan-Do-Check-Act (PDCA)
- D) Five Whys

    (Marks: 1)

    12. What should be included in the audit notification? (PC4)

    A) A list of audit findings

    B) Audit schedule and objectives

    C) Employee performance reviews

    D) Marketing strategies

    (Marks: 2)

    13. What is an essential pre-audit preparation step? (PC5)

    A) Conducting a financial audit

    B) Reviewing previous audit reports

    C) Issuing employee bonuses

    D) Organizing a team-building event

    (Marks: 2)

    14. What occurs in the second stage of a safety audit? (PC5)

    A) Field observations are made

    B) Management's response is gathered

    C) Audit findings are drafted

D) Interviews with employees are conducted

(Marks: 2)

15. Which stage involves identifying areas for improvement? (PC5)

A) First stage

B) Second stage

C) Third stage

D) Fourth stage

(Marks: 1)

16. What is included in the draft report of a safety audit? (PC6)

A) Personal opinions of auditors

B) A summary of findings and recommendations

C) Employee performance evaluations

D) Marketing strategies

(Marks: 2)

17. What is the primary purpose of the final audit report? (PC6)

A) To celebrate audit completion

B) To provide a comprehensive overview of findings and recommendations

C) To allocate budgets for next year

D) To promote employee performance

(Marks: 1)

18. What is typically discussed during the management's response phase? (PC6)

A) Finalizing the budget for the next year

B) Addressing audit findings and proposed corrective actions

C) Planning team-building activities

D) Setting marketing goals

(Marks: 2)

19. Who typically participates in the closing meeting? (PC7)

A) Only the auditors

B) Audit team, management, and relevant staff

C) All employees in the organization

D) External consultants only

(Marks: 1)

20. What is typically included in the final audit distribution? (PC7)

A) Audit findings and recommendations

B) Employee performance reviews

C) Financial forecasts

D) Marketing strategies

(Marks: 2)

Types and Scope of Safety Audit

21.Which type of audit is conducted by independent auditors? (PC8)

A) Internal Audits

B) Regulatory Audits

C) External Audits

D) Self-Audits

(Marks: 1)

22. What aspect do both internal and external audits typically assess? (PC8)

A) Marketing strategies

B) Financial performance

C) Compliance with laws and regulations

D) Employee satisfaction

(Marks: 2)

- 23. What is the main benefit of first-party audits? (PC9)
- A) Gaining external insights
- B) Reducing audit costs
- C) Identifying internal weaknesses
- D) Enhancing external reputation

(Marks: 2)

24. Which type of audit is often utilized to ensure supplier compliance? (PC9)

A) First-party audit

B) Second-party audit

C) Third-party audit

D) Internal audit

(Marks: 1)

- 25. What is the scope of a management system audit? (PC10)
- A) Financial performance only
- B) Overall management practices and effectiveness
- C) Compliance with HR policies
- D) Supplier evaluation

(Marks: 2)

- 26. Which type of audit is often required for regulatory compliance? (PC10)

A) Program audit

B) Financial audit

C) Compliance audit

D) Internal audit

(Marks: 1)

27. What distinguishes an audit of a program from an audit of an activity? (PC11)

A) Programs are broader and encompass multiple activities

B) Activities are more complex than programs

C) Programs only focus on financial aspects

D) There is no difference

(Marks: 2)

28. What is the focus of an audit related to machinery? (PC11)

A) Assessing financial performance

B) Evaluating operational efficiency and maintenance practices

C) Conducting employee training

D) Marketing analysis

(Marks: 1)

PDCA Cycle for Safety Audit Process

- 29. Which of the following best defines continuous improvement in the context of the PDCA cycle?(PC12)
- A) Making one-time changes to policies
- B) Incrementally improving safety performance through repeated cycles of PDCA
- C) Only conducting audits every few years
- D) Following rigid protocols without changes

    (Marks: 2)

    30. What is the focus of an audit related to machinery?(PC12)

    A) Assessing financial performance

    B) Evaluating operational efficiency and maintenance practices

    C) Conducting employee training

    D) Marketing analysis

    (Marks: 2)

    31. What is the benefit of auditing a specific activity within a larger program? (PC12)

    A) It reduces overall audit costs

    B) It provides detailed insights into the efficiency of that activity

    C) It eliminates the need for a program audit

    D) It focuses only on financial outcomes

(Marks: 1)

- 32. What is the first step in the "Plan" phase of the PDCA cycle?(PC13)
- A) Implement the plan
- B) Identify objectives and goals
- C) Analyse the results
- D) Review existing policies

(Marks: 2)

33. In the "Plan" stage, which tool is commonly used to analyse the current situation? (PC13)

A) SWOT analysis

B) Gantt chart

C) PERT chart

D) Fishbone diagram

(Marks: 2)

34. Which of the following activities is typically performed during the "Check" stage? (PC14)

A) Conducting a SWOT analysis

B) Gathering data on performance metrics

C) Finalizing the budget for the next cycle

D) Launching a new product

(Marks: 2)

35. During the "Act" stage, what should organizations do if the results did not meet expectations? (PC14)

A) Abandon the project entirely

B) Identify root causes and make necessary adjustments

C) Ignore the results and proceed with the current plan

D) Increase the budget without further analysis

(Marks: 1)

Section B : Practical Application

(Marks-40)

Scenario-Based Question

Concept of Safety Audit

(PC1)

1. Scenario: Your organization is planning to conduct its first safety audit to comply with industry regulations. You have been asked to outline the objectives of the audit.

   Question: What specific objectives will you set for this safety audit to ensure it effectively evaluates the organization's safety practices and meets regulatory requirements?

   (Marks: 4)

   (PC2)

2. Scenario: During a recent safety audit, you notice that some safety records appear to be overly polished and do not reflect the actual practices observed on-site. This raises concerns about "window dressing."

   Question: How will you address this issue of "window dressing" with the audit team, and what steps will you take to ensure that the audit findings accurately represent the organization's true safety culture and practices?

   (Marks: 4)

   (PC3)

3. Scenario: You are conducting a safety audit and plan to use various audit techniques to gather information. You decide to use observations and flow charts to analyse safety processes.

   Question: How will you implement these techniques during the audit, and what specific aspects of the safety processes will you focus on to ensure a comprehensive evaluation?

   (Marks: 4)

   Safety Audit Process and Stages

   PC4

4. Scenario: Your organization is about to conduct a safety audit, and you are in charge of the planning phase. You need to prepare for the opening meeting with key stakeholders.

   Question: What key topics will you include in the agenda for the opening meeting, and how will you ensure that all participants understand the audit's purpose and methodologies?

   (Marks: 3)

   PC5

5. Scenario: As the lead auditor, you are tasked with preparing for the pre-audit phase. You need to gather relevant documents and develop a timeline for the audit stages.

   Question: What specific documents will you collect in the pre-audit preparations, and how will you outline the objectives for each of the four stages of the safety audit to ensure a structured approach?

   (Marks: 3)

   PC6:

   Scenario: During the fieldwork phase of the safety audit, you notice discrepancies between documented safety procedures and actual practices on the floor. After completing the fieldwork, you need to draft the report.

   Question: How will you document these discrepancies in your report, and what approach will you take to ensure that management's response is incorporated effectively before finalizing the report?

   (Marks: 3)

   PC7

   Scenario: After completing the safety audit, you are preparing for the closing meeting where you will present your findings to management and other stakeholders.

   Question: What strategies will you employ to present the audit findings in the closing meeting, and how will you outline the follow-up actions to ensure that the recommendations are implemented effectively?

   (Marks: 3)

Types and Scope of Safety Audit

PC8

Scenario: Your organization is considering conducting both an internal and an external safety audit to improve its safety practices and compliance. You are tasked with presenting the benefits of each type to management.

Question: What key reasons and advantages will you highlight for conducting both internal and external audits, and how will you explain their complementary roles in enhancing safety performance?

(Marks: 2)

PC9: Understand First-Party, Second-Party, and Third-Party Audits

Scenario: A supplier has requested a second-party audit of your organization's safety practices before renewing their contract. You also have the option to conduct a first-party audit internally.

Question: How will you differentiate between the first-party and second-party audits in your approach, and what specific areas will you focus on to meet the supplier's requirements while ensuring internal compliance?

(Marks: 2)

PC10: Find the Scope of the Compliance Audit, Program Audit & Management System Audit

Scenario: Your organization is preparing for a compliance audit to ensure adherence to safety regulations. In addition, you are considering conducting a program audit of your safety training initiative.

Question: What elements will you include in the scope of the compliance audit, and how will you ensure that the program audit effectively assesses the impact and effectiveness of the safety training initiative?

(Marks: 2)

PC11: Find the Scope of Audit for a Task, Program, Activity, Project & Machinery

Scenario: Following a near-miss incident, your organization has decided to audit the safety protocols for a specific machinery project. You are responsible for defining the audit's scope.

Question: What factors will you consider when determining the scope of the audit for this machinery project, and how will you ensure that all relevant tasks and activities are included in the evaluation?

(Marks: 2)

PDCA Cycle for Safety Audit Process

PC12

Scenario: Your organization is in the process of implementing a new safety management system that incorporates the PDCA cycle. You are tasked with explaining the importance of each stage to your team.

Question: what specific requirements will you emphasize for effective implementation at each stage?

(Marks: 3)

PC13

Scenario: As part of the safety management system, your team has developed a new safety training program. You are responsible for leading the "Plan" and "Do" stages of the PDCA cycle.

Question: What steps will you take during the "Plan" stage to ensure that the training program aligns with safety objectives?

(Marks: 2)

PC14: Understand and Analyse "Check" and "Act" Stages of PDCA Cycle

Scenario: After completing the safety training program, you are now in the "Check" stage of the PDCA cycle. Initial feedback indicates mixed results regarding participants' understanding of safety procedures.

Question: How will you evaluate the effectiveness of the training during the "Check" stage?

(Marks: 3)

Criteria	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks
Concept of Safety Audit	18	12	-	-	30
Safety Audit Process and Stages	18	12	-	-	30
Types and Scope of Safety Audit	12	8	-	-	20
PDCA Cycle for Safety Audit Process	12	8	-		20
NOS Total Marks	60	40			100

ASSESSMENT CRITERIA

<u>**SSD/VSQ/NO13O**</u>**: Hazard identification, categories, and control.**

Safety Auditor Certification Assessment Paper

Total Marks: 100

Time: 2 Hours

Section A: Multiple Choice Questions (MCQs)

(Marks=60)

1. Which of the following is an example of a fatal accident? (PC1)

A) A slip that requires first aid

B) A fall that results in death

C) A minor cut treated on-site

D) A near miss incident

(Marks=2)

2. What is the primary purpose of reporting incidents and accidents? (PC1)

A) To assign blame

B) To prevent future occurrences

C) To meet regulatory requirements

D) To document employee performance

(Marks=2)

3. What is the difference between an incident and an accident? (PC1)

A) An incident involves property damage only

B) An accident always results in injury

C) Incidents are always reported

D) There is no difference

(Marks=2)

4. Which hazard category includes slips, trips, and falls? (PC2)

A) Chemical hazards

B) Physical hazards

C) Ergonomic hazards

D) Biological hazards

(Marks=2)

5. Which type of PPE is used to protect the head? (PC2)

A) Safety goggles

B) Gloves

C) Hard hats

D) Respirators

(Marks=2)

6. What does a blue safety sign typically indicate? (PC3)

A) Prohibition

B) Mandatory action

C) Caution

D) Emergency information

(Marks=2)

Hierarchy of Control

7. What is an example of a substitution control? (PC4)

A) Adding guards to machinery

B) Changing the layout of the workplace

C) Using non-toxic cleaners instead of hazardous ones

D) Implementing safety training

(Marks=2)

8. Which of the following is the correct order of the "Hierarchy of Controls"?(PC4)

A) Elimination, PPE, Engineering controls, Administrative controls, Substitution

B) Substitution, Elimination, Engineering controls, Administrative controls, PPE

C) Elimination, Substitution, Engineering controls, Administrative controls, PPE

D) PPE, Engineering controls, Elimination, Substitution, Administrative controls

(Marks=2)

9. Why is it important to follow the hierarchy of controls? (PC5)

A) To increase paperwork

B) To ensure effective risk management

C) To maintain employee satisfaction

D) To avoid legal issues

(Marks=2)

10. Why are engineering controls important in the hierarchy? (PC5)

A) They are easy to implement

B) They reduce reliance on human behaviour

C) They are the cheapest option

D) They eliminate the need for training

(Marks=2)

11. Which control measure would involve rotating job tasks among workers? (PC6)

A) Elimination

B) Administrative controls

C) Engineering controls

D) PPE

(Marks=2)

12.What is considered a last line of defence in the hierarchy of controls? (PC6)

A) Engineering controls

B) Administrative controls

C) Personal protective equipment (PPE)

D) Substitution

(Marks=2)

Basic Hazard categories and control

13. What is a common cause of electrical hazards in the workplace? (PC7)

A) Wet conditions

B) Proper grounding

C) Insulated tools

D) Adequate ventilation

(Marks=2)

14. What type of fire extinguisher is suitable for electrical fires? (PC7)

A) Water extinguisher

B) Foam extinguisher

C) CO2 extinguisher

D) Powder extinguisher

(Marks=2)

15. What is the primary purpose of fire extinguishers? (PC7)

A) To create smoke

B) To extinguish small fires

C) To promote fire hazards

D) To reduce visibility

(Marks=1)

16. What is the purpose of machine guarding? (PC8)

A) To decorate the machine

B) To prevent unauthorized access

C) To protect operators from moving parts

D) To increase production speed

(Marks=2)

17. What is a common cause of tool-related injuries? (PC8)

A) Using the right tool for the job
B) Inadequate maintenance
C) Wearing gloves
D) Proper lifting techniques

(Marks=2)

18. What is the primary hazard of using pneumatic tools? (PC8)

A) Noise exposure
B) Chemical spills
C) Electrical shock
D) High pressure

(Marks=1)

19. Confined Spaces can have: (PC9)

A. Areas with limited access

B. Areas with atmospheric hazards

C. Electrical Hazards

D. Any or All of the above

(Marks=2)

20. What is a key safety consideration when working in an excavation? (PC9)

A) High visibility clothing

B) Proper shoring and bracing

C) Avoiding training

D) Ignoring weather conditions

(Marks=2)

21. What is a significant hazard associated with lone working? (PC9)

A) Increased productivity

B) Isolation in emergencies

C) Enhanced focus

D) Improved decision-making

(Marks=1)

22. What is the purpose of a traffic management plan? (PC1O)

A) To increase productivity

B) To outline safe movement of vehicles and pedestrians

C) To minimize downtime

D) To create traffic jams

(Marks=2)

23. Which of the following is a key factor in vehicle safety at the workplace? (PC1O)

A) Vehicle maintenance and inspections

B) Ignoring warning lights

C) Using any vehicle for work

D) Driving recklessly

(Marks=1)

24. What should be assessed to ensure safe movement of the workforce? (PC1O)

A) Employee opinions

B) Traffic patterns and potential hazards

C) Personal schedules

D) Management preference

(Marks=2)

25. Which of the following is an example of a hazardous substance? (PC11)

A) Water

B) Sand

C) Asbestos

D) Paper

(Marks=1)

26. Which of the following is a common route of exposure to hazardous substances? (PC11)

A) Inhalation

B) Using machinery

C) Walking

D) Eating

(Marks=2)

27. Which of the following is essential for safe storage of hazardous substances? (PC11)

A) Using clear containers

B) Labelling and securing storage areas

C) Storing in unmarked areas

D) Keeping in direct sunlight

(Marks=2)

28. What type of hazard is associated with repetitive movements? (PC12)

A) Environmental hazard

B) Ergonomic hazard

C) Chemical hazard

D) Physical hazard

(Marks=2)

29. What is a proper technique for manual handling? (PC12)

A) Lifting with your back

B) Bending your knees and keeping the load close

C) Twisting while lifting

D) Lifting with one hand

(Marks=2)

30. Which type of radiation is considered the most hazardous in a workplace setting? (PC13)

A) Ultraviolet (UV) radiation

B) Infrared radiation

C) Ionizing radiation

D) Non-ionizing radiation

(Marks=2)

31.What is a sign of workplace violence? (PC13)

A) Increased teamwork

B) Changes in employee behaviour

C) Regular meetings

D) Enhanced communication

(Marks=2)

32. What should be checked before lifting or rigging operations? (PC14)

A) The weather forecast

B) Equipment condition and load limits

C) Employee preferences

D) Previous lift times

(Marks=1)

33. What is a critical step when using a crane for lifting? (PC14)

A) Bypassing weight limits

B) Inspecting the crane before use

C) Allowing unauthorized personnel near the area

D) Using outdated signals

(Marks=2)

Section B: Practical Application

(Marks=40)

Scenario-Based Question

Basic Hazard Identification

PC1: Understand Basic Definitions

Scenario Question:

During a routine workplace inspection, an employee slips on a wet floor but manages to catch themselves before falling. Later, another employee does fall and injures their wrist.

Define the following terms in this scenario:

a) Hazard

b) Unsafe condition

c) Near miss incident

d) Non-fatal accident

(4 marks)

PC2: Understand Hazard Categories and Risks Introduced by PPEs

Scenario Question:

A construction site worker is observed wearing gloves and safety goggles while handling sharp materials. However, they neglect to wear a hard hat in a zone where overhead work is being done.

Identify the hazard categories present in this situation and explain the risks introduced by the lack of appropriate PPE.

(2 marks)

PC3: Know Different Types of Safety Signs and Signals

Scenario Question:

You are walking through a factory and notice various safety signs, including "Caution: Wet Floor," "Authorized Personnel Only," and a signal indicating a fire exit.

Describe the purpose of each of the above safety signs .

(2 marks)

Hierarchy of Control

PC4: Understand the Hierarchy of Controls in Safety

Scenario Question:

In a manufacturing facility, workers are exposed to high noise levels. The safety team considers various options to mitigate this risk, such as providing earplugs, installing sound barriers, and redesigning the work area to reduce noise exposure.

Identify and explain the first three levels of the hierarchy of controls that the safety team should consider in this scenario.

(3 marks)

PC5: Understanding Importance of Each Hierarchy of Control

Scenario Question:

A chemical spill occurs in a lab, and the team must respond quickly. They have access to personal protective equipment (PPE), a spill kit, and a designated emergency evacuation route.

Discuss the importance of implementing the hierarchy of controls in this situation, specifically focusing on why higher-level controls (elimination, substitution) should be prioritized over lower-level controls (PPE).

(3 marks)

PC6: Understanding the Steps in the Hierarchy of Control

Scenario Question:

A construction site has identified risks related to working at heights. The safety manager is considering several control measures: installing guardrails, providing harnesses, and conducting training sessions on fall prevention.

Outline the steps the safety manager should take, in order, according to the hierarchy of controls, to effectively manage the risk of falling from heights.

(2 marks)

Basic Hazard categories and control

PC7: Understand Different Hazard Categories & Control: Electricity and Fire

Scenario Question:

During a routine inspection of a warehouse, a technician notices frayed electrical wires near a storage area and several boxes stacked near a fire exit.

Identify the hazards present and discuss appropriate control measures for both the electrical hazards and the fire hazards.

(3 marks)

PC8: Understand Different Hazard Categories & Control: Tools, Equipment, and Machinery

Scenario Question:

A maintenance worker is using a power saw without the safety guard in place and is not wearing gloves. Meanwhile, another worker is using a forklift without proper training.

Discuss the hazards associated with these situations and recommend control measures to enhance safety while using tools and equipment.

(3 marks)

PC9: Understand Different Hazard Categories & Control: Health and Workplace Hazards

Scenario Question:

A team is preparing to enter a confined space for maintenance work. They are aware of potential hazards such as low oxygen levels and hazardous gases but have not yet conducted any assessments.

Identify the specific hazards related to working in a confined space and outline the control measures that should be implemented before entering.

(3 marks)

PC10: Understand Different Hazard Categories & Control: Movement of Workforce, Work-Related Driving, and Vehicles at Workplace

Scenario Question:

In a busy loading dock, workers are frequently moving between parked trucks and storage areas while forklifts are also in operation. There have been near misses involving pedestrians and vehicles.

Identify the hazards related to the movement of workforce and vehicles in this scenario, and suggest control measures to ensure safety in the area.

(3 marks)

PC11: Understand Different Hazard Categories & Control: Hazardous Substances

Scenario Question:

A lab technician is handling a chemical known to be corrosive without using proper PPE or following safety data sheet (SDS) guidelines. There is also a spill on the counter that has not been addressed.

Identify the hazards presented in this scenario and discuss the necessary control measures for handling hazardous substances safely.

(3 marks)

PC12: Understand Different Hazard Categories & Control: Musculoskeletal Disorders, Manual Handling, and Load Handling Equipment

Scenario Question:

In a warehouse, workers are frequently lifting heavy boxes without any mechanical aids, leading to reports of back pain among several employees. Additionally, some boxes are stacked at awkward heights.

Identify the musculoskeletal hazards present in this scenario and suggest appropriate control measures to reduce the risk of injury during manual handling.

(3 marks)

PC13: Understand Different Hazard Categories & Control: Noise, Vibration, Radiation, Mental Ill-Health, Violence at Work, Substance Abuse at Workplace

Scenario Question:

A construction crew works in an area with high noise levels from machinery, and some workers have also expressed feeling overwhelmed due to tight deadlines. There are concerns about potential substance abuse among a few team members.

Criteria	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks
Basic Hazard Identification	12	8	-	-	20
Hierarchy of Control	12	8	-	-	20
Basic Hazard categories and control	36	24	-	-	60
NOS Total Marks	60	40			100

Discuss the various hazards identified in this scenario and recommend control measures to address each of these risks effectively.

(3 marks)

PC14: Understand Different Hazard Categories & Control: Lifting and Rigging Hazards and Control

Scenario Question:

During a lifting operation at a construction site, a team notices that the load is not properly secured and the crane operator is not using a spotter to guide the lift. The load is also being lifted over workers who are unaware of the operation.

Identify the lifting and rigging hazards present in this situation and outline the control measures that should be implemented to ensure safe lifting operations.

(3 marks)

Assessment Criteria

SSD/VSQ/NO114: Risk Score Evaluation of Hazards

Safety Auditor Certification Assessment Paper

Total Marks: 100

Time: 2 Hours

Section A: Multiple Choice Questions (MCQs)

(MARKS=42)

Risks and objective of risk assessments

1. What does a 5x5 risk matrix help determine? (PC1)

A) The exact cost of a project

B) The level of risk based on likelihood and impact

C) The duration of a task

D) The number of team members needed

(MARKS=2)

2. What does a 5x5 risk matrix help determine? (PC1)
A) The exact cost of a project
B) The level of risk based on likelihood and impact
C) The duration of a task
D) The number of team members needed

(MARKS=2)

3. Which of the following is a statutory requirement for HIRA? (PC2)

A) Conducting regular fire drills

B) Documenting risk assessments

C) Increasing working hours

D) Providing free lunches

(MARKS=2)

4. Who is typically responsible for conducting HIRA in an organization? (PC2)

A) Only the CEO

B) All employees

C) Designated safety officers or teams

D) External auditors only

(MARKS=2)

5. What does the term "likelihood" refer to in risk assessments? (PC3)

A) The consequence of a risk

B) The probability of a risk occurring

C) The cost associated with a risk

D) The duration of a risk

(MARKS=2)

6. Which scenario describes a hazard with low likelihood and high severity? (PC3)

A) A common but minor issue

B) A rare event that could have serious consequences

C) A frequent occurrence with significant effects

D) An unavoidable daily risk

(MARKS=2)

Hazard Identification and Risk Assessment (HIRA)

7. In risk assessment, what does "risk evaluation" involve? (PC4)

A) Deciding on training schedules

B) Comparing risks to established criteria

C) Assigning tasks to employees

D) Reducing the number of employee

(MARKS=2)

8.Which step comes first in the HIRA process? (PC4)

A) Risk control

B) Risk assessment

C) Hazard identification

D) Risk elimination

(MARKS=1)

9. How can poor ergonomics endanger a person's health? (PC5)

A) It promotes better posture

B) It reduces physical strain

C) It can lead to chronic pain and injury

D) It increases productivity.

(MARKS=2)

10. Why is it important to assess both likelihood and severity of hazards? (PC5)

A) To create unnecessary paperwork

B) To effectively prioritize risks and allocate resources

C) To ignore less severe hazards

D) To make things more complicated

(MARKS=1)

11. What should be done after identifying a hazard? (PC6)

A) Ignore it

B) Immediately implement controls

C) Analyse the risk

D) Document it only

(MARKS=2)

12. What is a key benefit of conducting HIRA? (PC6)

A) It makes work harder

B) It helps prioritize safety measures

C) It reduces employee morale

D) It increases workplace hazards

(MARKS=1)

13. In the hierarchy of control, which is considered the most effective method? (PC7)

A) Personal protective equipment

B) Administrative controls

C) Elimination of the hazard

D) Training

(MARKS=2)

14. What is the role of PPE in the hierarchy of controls? (PC7)

A) It is the first line of defence against hazards

B) It provides the highest level of protection

C) It is used when other controls are not feasible

D) It eliminates hazards

(MARKS=1)

15. What is the focus of a safety executive in an organization? (PC8)

A) Managing the budget

B) Developing and implementing safety policies

C) Performing routine inspections

D) Training all employees

(MARKS=2)

16. What is a key responsibility of a safety supervisor? (PC8)

A) Conducting performance reviews

B) Overseeing daily safety operations and ensuring compliance

C) Designing safety equipment

D) Developing marketing strategies

(MARKS=1)

17. What is a key component evaluated in LOPA? (PC9)

A) Financial impact

B) The probability of failure of each layer of protection

C) Employee satisfaction

D) Market trends

(MARKS=2)

18. What is the primary purpose of defining Safety Integrity Levels (SIL)? (PC9)

A) To measure employee performance

B) To assess the reliability of safety systems

C) To increase production efficiency

D) To manage financial risks

(MARKS=1)

19**. Which of the following best describes a "controller of premises"?** (PC1O)

A) An employee who manages marketing strategies
B) An individual responsible for the overall safety and compliance of a facility
C) A financial officer
D) A project manager

(MARKS=2)

20. When should a work permit be issued to a contractor? (PC1O)

A) Only during annual reviews

B) Before any high-risk work is initiated

C) After the work is completed

D) When the contractor requests it

(MARKS=1)

21. What is the purpose of training programs for contractors? (PC11)

A) To improve their financial skills

B) To ensure they understand safety protocols and site-specific risks

C) To enhance their marketing abilities

D) To prepare them for job interviews

(MARKS=2)

22. Why is it important to hold regular review meetings with contractors? (PC11)

A) To discuss financial performance only

B) To assess safety compliance and address any ongoing issues

C) To finalize contract terms

D) To plan employee benefits

(MARKS=1)

23. In a scenario where a new piece of equipment is introduced, what should be done prior to its use? (PC12)

A) Wait for accidents to occur

B) Conduct a thorough risk assessment

C) Train only the management team

D) Increase production levels immediately

(MARKS=2)

24. What is the significance of documenting the risk assessment findings? (PC12)

A) It serves no real purpose

B) It provides a reference for future assessments and ensures accountability

C) It complicates the process

D) It replaces the need for safety training

(MARKS=2)

25. After implementing control measures, what should be done next? (PC12)

A) Ignore the situation

B) Monitor the effectiveness of the measures

C) Increase production rates

D) Conduct employee performance reviews

(MARKS=2)

Section B: Practical Application

(MARKS=28)

PC1: Understand Risks, Objectives of Risk Assessment, 5x5 Risk Matrix, and Risk Ratings

Scenario: A manufacturing company is planning to introduce a new production line. During the initial planning phase, the safety team conducts a risk assessment to identify potential hazards associated with the new equipment.

Question: What objectives should the safety team focus on during this risk assessment, and how can they effectively use a 5x5 risk matrix to evaluate the risks associated with the new production line?

(MARKS=2)

PC2: Understand HIRA and Its Statutory Requirements

Scenario: An organization is preparing for an upcoming audit to ensure compliance with safety regulations. The audit will focus on how well the organization has implemented Hazard Identification and Risk Assessment (HIRA) processes.

Question: What statutory requirements related to HIRA should the organization ensure are being met, and how can they demonstrate that hazards have been properly identified and assessed in their workplace?

(MARKS=2)

PC3: Understand Likelihood and Severity of Hazard

Scenario: A construction site is experiencing several near-miss incidents related to falling objects. The safety officer needs to assess the risks associated with this hazard to prioritize corrective actions.

Question: How should the safety officer evaluate the likelihood and severity of the hazard related to falling objects, and what steps can be taken to mitigate these risks based on the assessment?

(MARKS=2)

PC4: Identify the Persons Vulnerable to the Hazard

Scenario: A chemical manufacturing plant is reviewing its processes and notices that workers are exposed to various hazardous chemicals without adequate protective equipment.

Question: Who are the specific individuals or groups within the plant that may be most vulnerable to the chemical hazards, and what factors contribute to their vulnerability

(MARKS=2)

PC5: Analyse How the Hazard Can Lead to an Accident or Endanger a Person's Life, Likelihood, and Severity of the Hazard

Scenario: An office environment has poor ergonomic setups, leading to complaints of discomfort and pain among employees.

Question: How can the lack of ergonomic considerations in the office lead to accidents or long-term health issues, and what should be analysed regarding the likelihood and severity of these hazards?

(MARKS=2)

PC6: Carry Out Risk Assessment and Prepare Risk Matrix

Scenario: A construction site is preparing to assess the risks associated with working at heights. The site manager has gathered data on past incidents and current safety measures.

Question: How should the site manager carry out a risk assessment for the hazards associated with working at heights, and how can they prepare a risk matrix to categorize and prioritize these risks?

(MARKS=2)

PC7: Suggest Corrective Action in HIRA by Following Hierarchy of Control

Scenario: A factory has identified that machine guarding is inadequate, posing a risk of injury to operators.

Question: What corrective actions can be suggested to address the identified hazard using the hierarchy of control, and how can these actions effectively reduce the risk of injury in the workplace?

(MARKS=2)

PC8: Understand the Role of Management and Safety Personnel

Scenario: A manufacturing company has recently experienced a rise in safety incidents. The management team decides to review the roles of safety personnel to improve the situation.

Question: What specific responsibilities should the management team expect from the safety supervisor, safety officer, and safety manager in addressing the recent safety incidents, and how can they collaborate effectively?

(MARKS=2)

PC9: Understand Fundamentals of Process Safety and OSHA Standards

Scenario: A chemical processing plant is preparing for an audit to assess its compliance with OSHA standards. The plant manager is reviewing various safety methodologies, including Quantitative Risk Assessment (QRA) and Layer of Protection Analysis (LOPA).

Question: How can the plant manager ensure that process safety fundamentals are effectively integrated into the safety practices of the plant, and what role do QRA and LOPA play in enhancing safety?

(MARKS=2)

PC10: Understand the Role of Occupier, Controller of Premises, and Contractors

Scenario: An organization is planning a major renovation project and will engage several contractors to perform the work. The safety committee is discussing the importance of clear communication regarding safety responsibilities.

Question: What are the key roles of the occupier and the controller of premises in ensuring contractor safety during the renovation project, and how should a work permit system be utilized to manage risks effectively?
(MARKS=2)

PC11: Understand the Selection Prerequisites of a Contractor and Contractor Management

Scenario 1: Selection Prerequisites A construction company is preparing to hire a contractor for a major project. The project manager is outlining the criteria for selection.

Question: What key prerequisites should the project manager consider when selecting a contractor to ensure safety and compliance with industry standards?
(MARKS=2)

PC12

Scenario: An organization is preparing for an external audit and needs to conduct a comprehensive risk assessment of its operations.

Question: What steps should be taken to carry out an effective risk assessment, and what key elements should be documented in the process?

(MARKS=6)

Section C: Project Work

1. Identify the hazard and risk in Maintenance work of Boiler and Calculate Risk of different Hazard. (Risks and objective of risk assessments)

   (10 Marks)

2. Prepare a HIRA for Maintenance work of Boiler Activity. (Hazard Identification and Risk Assessment (HIRA)

   (10 Marks)

3. What kind of clearance and work permit is required for Maintenance work of Boiler. (Hierarchy and Process Safety)

   (10 Marks)

SSD/VSQ/NO115: Safety Audit Report Preparation

Safety Auditor Certification Assessment Paper

Total Marks: 100

Time: 2 Hours

Section A: Multiple Choice Questions (MCQs)

(MARKS=48)

Safety Audit inspection scope and audit management.

1. Which of the following is true about safety inspections? (PC1)

A) They are typically more formal and extensive than audits

B) They focus on compliance and identifying immediate hazards

C) They occur less frequently than audits

D) They do not require any documentation

(MARKS=2)

2. Which is an example of a proactive safety measure? (PC1)

A) Conducting regular safety audits

B) Reacting to an accident

C) Reporting near misses

D) Holding safety training sessions

(MARKS=2)

3. Which of the following is an outcome of a safety audit? (PC1)

A) A list of immediate corrective actions

B) Recommendations for improving safety management

C) A checklist of equipment status

D) An emergency response plan

(MARKS=1)

4. A Health and Safety audit typically reviews: (PC2)

A) Only the last year's incidents

B) All relevant documentation and records related to safety

C) Only the physical condition of equipment

D) Employee personal files

(MARKS=2)

5. The scope of a Health and Safety management system includes: (PC2)

A) Identifying risks and implementing controls

B) Focusing exclusively on compliance

C) Developing marketing strategies

D) Managing employee payroll

(MARKS=2)

6. Which of the following areas is typically included in the scope of a Health and Safety audit? (PC2)

A) Employee performance reviews

B) Financial audits

C) Compliance with legal regulations

D) Marketing strategies

(MARKS=2)

7. What does the "Scope" section of an audit report define? (PC3)

A) The qualifications of the auditors

B) The period and areas covered during the audit

C) The financial impact of the audit

D) The recommendations made by auditors

(MARKS=2)

Scrutiny of Documents in safety audit.

8. What is the primary purpose of the Statement of Intent in a safety policy? (PC4)

A) To outline financial goals

B) To communicate management's commitment to safety

C) To detail training requirements

D) To establish marketing strategies

(MARKS=2)

9. What aspect of Safety Culture encourages employees to report near misses? (PC4)

A) Fear of punishment

B) Blame culture

C) Supportive leadership

D) Lack of communication

(MARKS=2)

10. What role does leadership play in establishing a positive safety culture? (PC4)

 A) Leaders should enforce rules without engaging with employees

 B) Leaders must model safe behaviours and prioritize safety in decision-making

 C) Leaders should delegate safety responsibilities entirely

 D) Leaders only need to address safety after an incident occurs

(MARKS=2)

11. Absence and sickness data can provide insights into: (PC5)

A) Employee job satisfaction

B) Potential workplace hazards and health issues

C) Productivity levels

D) Financial performance

(MARKS=2)

12. What role do training records play in a safety audit? (PC5)

A) They provide financial data

B) They demonstrate compliance with safety training

C) They show employee performance

D) They outline marketing strategies

    (MARKS=2)

13. Monitoring records are important because they: (PC5)

A) Capture daily attendance

B) Provide evidence of compliance and effectiveness of safety measures

C) Focus solely on financial audits

D) Are only required during inspections

(MARKS=2)

14. IS 14489:1998 emphasizes the importance of: (PC6)

A) Annual sales targets

B) Continuous improvement in safety performance

C) Reducing employee training programs

D) Increasing production speed

(MARKS=2)

15. IS 14489:1998 encourages organizations to: (PC6)

A) Ignore minor safety issues

B) Focus solely on compliance with legal requirements

C) Foster a culture of safety and proactive hazard management

D) Prioritize profit over safety

(MARKS=2)

16. Which of the following is NOT a step in the audit process outlined in IS 14489:1998? (PC6)

A) Planning the audit

B) Conducting the audit

C) Implementing new marketing strategies

D) Reporting the findings

(MARKS=2)

Safety Audit data collection and report preparation

17. Which of the following should be included in an SOP? (PC7)

A) Employee opinions

B) Steps for task completion and safety measures

C) Market analysis

D) Customer feedback

(MARKS=2)

18. What does a Safe System of Work aim to do? (PC7)

A) Increase production output

B) Ensure tasks are carried out safely

C) Improve customer relations

D) Reduce employee training needs

(MARKS=2)

19. What is a key element to include in the records of an audit interview? (PC8)

A) Personal opinions of the auditor

B) Date, time, and participants of the interview

C) Financial projections

d) Employee attendance records

(MARKS=2)

20. Which of the following is an essential skill for an auditor conducting interviews? (PC8)

A) Public speaking

B) Active listening

C) Technical writing

D) Graphic design

(MARKS=2)

21. What information do maintenance records provide in safety audits? (PC9)

A) Employee performance metrics

B) Equipment safety status and upkeep

C) Financial budgets

D) Marketing insights

(MARKS=2)

22. What is the role of communication records in an organization? (PC9)

A) To limit information sharing

B) To facilitate information exchange and decision-making

C) To track employee performance

D) To promote social events

(MARKS=2)

23.What do health and surveillance records track? (PC9)

A) Employee productivity

B) Employee health status and potential exposure to hazards

C) Marketing effectiveness

D) Customer satisfaction

(MARKS=1)

24. What should the 'opinion' section of the audit report contain? (PC1O)

A) A detailed financial analysis

B) A summary of the auditors' findings and conclusions regarding

C) Personal opinions of the auditors

D) Marketing strategies

(MARKS=2)

25. What is emphasized in the "Management Responsibility" section of the audit report? (PC1O)

A) Auditor's duties

B) Legal implications

C) Management's role in financial reporting

D) Stakeholder interests

(MARKS=1)

26. What is the significance of including the 'Date of the report' in an audit report (PC1O)

A) It indicates when the auditor started the audit.

B) It shows the completion date of the audit.

C) It is used for legal purposes.

D) It helps in scheduling future audits.

(MARKS=2)

Section B: Practical Application

(MARKS=32)

Safety Audit inspection scope and audit management.

(PC1)

Scenario:
You are a safety officer at a manufacturing facility. Last month, you conducted a safety audit and identified several areas for improvement, including insufficient training records and outdated safety procedures. This month, you are tasked with performing a safety inspection of the production floor.

Question

How will you differentiate your approach in the inspection compared to the audit?

(MARKS=3)

(PC2)

Scenario:
You are part of the health and safety team in a large construction company. Your company is preparing for a comprehensive health and safety audit of its management system, which encompasses policies, procedures, training programs, and incident reporting mechanisms. The audit aims to assess compliance with legal requirements and identify areas for improvement.

Question:

As part of the audit preparation, what specific areas of the health and safety management system will you focus

(MARKS=3)

(PC3)

Scenario:
You are the lead auditor for an upcoming health and safety audit in a manufacturing facility. You are preparing the audit report, which needs to be comprehensive and structured according to standard audit elements.

Question:

In drafting the audit report, what key information will you include

(MARKS=2)

Scrutiny of Documents in safety audit.

(PC4)

Scenario:
You are a safety manager in a medium-sized manufacturing company. The company has recently

updated its safety policy, which includes a Statement of Intent aimed at fostering a strong safety culture. Your task is to evaluate the existing safety culture and identify indicators that demonstrate a positive safety environment.

Question:

What steps would you take to assess the current safety culture within the organization?

(MARKS=4)

PC5

Scenario:

You are tasked with conducting a comprehensive review of the health and safety management system in your organization. To gather the necessary information, you will utilize various data sources, including legal compliance documents, risk assessments, and incident records.

Question:

If you identify a significant trend in the absence and sickness data related to workplace incidents, what steps would you recommend addressing this issue?

(MARKS=4)

PC6

Scenario:
You are a safety officer in a large industrial plant, and your organization is preparing for an occupational safety and health audit in accordance with IS 14489:1998. Your role is to ensure that all necessary practices and documentation are in place to comply with the code of practice.

Question:

What are the key components of IS 14489:1998 that you will focus on while preparing for the audit, and why are they important for ensuring occupational safety and health?

(MARKS=4)

Safety Audit data collection and report preparation.

PC7

Scenario:

You are the health and safety coordinator for a construction company. As part of your responsibilities, you need to develop a comprehensive safety policy, create standard operating procedures (SOPs), prepare an agenda and minutes for the upcoming safety committee meeting, and outline safe systems of work for various tasks on-site.

Question:

After the meeting, how will you structure the minutes to accurately capture discussions and decisions made? What key information should be included to ensure clarity and accountability?

(MARKS=3)

PC8

Scenario:

You are conducting an audit of the health and safety management system at a manufacturing facility. As part of the audit process, you need to conduct interviews with various staff members, including management, safety officers, and frontline workers, to gather insights and assess compliance.

Question:

Recording Responses: What method will you use to record the responses during the interviews? How will you ensure that the information captured is clear and useful for the audit report?

(MARKS=3)

PC9

Scenario:

You are tasked with compiling a comprehensive report on the health and safety performance of your organization over the past year. To do this, you need to gather and analyze data from various sources, including compliance data, incident records, and training logs.

Question:

Identifying Data Sources: List at least five different data sources you would prioritize for gathering information.

(MARKS=3)

PC1O

Scenario:

You are the lead auditor conducting a health and safety audit for a manufacturing facility, following the guidelines set out in IS 14489:1998. After completing the audit, you are now responsible for preparing the audit report that summarizes your findings and recommendations.

Question:

Report Structure: What key sections will you include in your audit report to align with the requirements of IS 14489:1998? Briefly describe the purpose of each section.

Section C: Project Work

(MARKS=20)

Safety Audit inspection scope and audit management.

Scenario:

Workplace Safety Audit

1. You are the Health and Safety Manager at a manufacturing facility. A safety audit is scheduled to assess compliance with safety regulations.

   Define the scope of the safety audit for your facility. What specific areas and processes will you include, and why are they critical to your audit?

   (MARKS=6)

Scenario:

Scrutiny of Documents in safety audit

1. You have been tasked with reviewing the safety policies of a construction company as part of the audit process.
   a. Question

2. Describe the steps you would take to evaluate the effectiveness of the company's safety policies. What specific criteria will you use to assess their adequacy?

(MARKS=7)

Safety Audit data collection and report preparation.

1. You are leading a safety audit for a manufacturing facility. Before the audit, you need to plan your data collection methods.

Question

What types of data will you collect during the audit, and what methods will you use to gather this data? Discuss the importance of each method in providing a comprehensive view of the facility's safety practices.

(MARKS=7)

SSD/VSQ/NO131: **Statutes and Legislative requirements in Health and Safety**

Safety Auditor Certification Assessment Paper

Total Marks: 100

Time: 2 Hours

Section A: Multiple Choice Questions (MCQs)

(60 Marks)

1. Which workers are covered under the BOCW Act? (PC1)

A) Only skilled workers

B) All construction workers

C) Office staff in construction companies

D) Workers in manufacturing industries

(MARKS=2)

2. What is the minimum age for construction workers as per the BOCW Act? (PC1)

A) 14 years

B) 16 years

C) 18 years

D) 21 years

(MARKS=2)

3. What is the role of the Advisory Committee under the BOCW Act? (PC1)

A) To oversee project costs

B) To recommend measures for worker safety and welfare

C) To manage construction contracts

D) To conduct performance appraisals

(MARKS=1)

4. What is the purpose of a safety committee in a factory? (PC2)

A) To manage finances

B) To monitor production efficiency

C) To promote health and safety measures

D) To conduct marketing strategies

(MARKS=2)

5. What is the role of the Factory Inspector? (PC2)

A) To ensure compliance with safety regulations

B) To manage factory budgets

C) To supervise production schedules

D) To hire new employees

(MARKS=2)

6. What is the primary purpose of the OSH Code 2020? (PC3)

A) To increase production efficiency

B) To ensure occupational safety and health for workers

C) To regulate employee salaries

D) To promote environmental conservation

(MARKS=2)

7. What does the ILO promote regarding occupational safety? (PC4)

A) Economic growth

B) Workers' rights and safety

C) Urban planning

D) Environmental sustainability

(MARKS=2)

8. What is required before establishing a new industrial project under the Environment Protection Act? (PC4)

A) Only financial approval

B) Environmental Impact Assessment (EIA)

C) No specific requirement

D) Public consultation only

(MARKS=2)

9. Which of the following sectors does the OSID Guidelines primarily apply to? (PC5)

A) Agriculture

B) Manufacturing

C) Oil and gas industry

D) Information technology

(MARKS=2)

10. What is required for incident reporting under the OSID Guidelines? (PC5)

A) Incidents must be reported only if injuries occur

B) All incidents must be documented and analysed

C) Incidents can be ignored

D) Reports are only necessary for major accidents

(MARKS=2)

11. What type of training must be provided to new employees in mines? (PC6)

A) Only on-the-job training

B) Induction training covering safety and operational procedures

C) No specific training is required

D) Advanced technical training only

(MARKS=2)

12. Which type of mine workers requires specialized training under the DGMS rules? (PC6)

A) Administrative staff

B) Skilled workers operating heavy machinery

C) Marketing personnel

D) General labourers

(MARKS=2)

13. What is the significance of the National Electricity Policy? (PC7)

A) To regulate telecommunications

B) To provide a framework for the development of the electricity sector

C) To manage labour relations

D) To oversee environmental regulation

(MARKS=2)

14. Who is responsible for enforcing the Electricity Act 2003? (PC7)

A) Local governments

B) State Electricity Boards

C) Ministry of Environment

D) Trade unions

(MARKS=2)

15. According to NBC 2016, which type of occupancy requires special consideration in building design? (PC8)

A) Residential buildings

B) Educational and health facilities

C) Commercial buildings

D) All types of occupancy

(MARKS=2)

16. What is the recommended minimum ceiling height for habitable rooms according to NBC? (PC8)

A) 2.4 meters

B) 2.7 meters

C) 3.0 meters

D) 2.1 meters

(MARKS=2)

17. What is the focus of the National Fire Protection Association (NFPA)? (PC9)

A) Environmental regulations

B) Fire safety codes

C) Transportation safety

D) Workplace ergonomics

(MARKS=2)

18. What is the NFPA's stance on smoking in buildings? (PC9)

A) Smoking is always allowed

B) Designated smoking areas must be established with proper safety measures

C) Smoking is not regulated by NFPA

D) Smoking is prohibited in all circumstances

(MARKS=2)

19. What is required for the storage of explosives as per PESO regulations? (PC10)

A) Storage can be done anywhere

B) Proper licensing and designated storage facilities

C) Only financial security

D) No specific requirements

(MARKS=2)

20. Under PESO regulations, what is the maximum quantity of explosives that can be stored without a license? (PC10)

A) 5 kg

B) 50 kg

C) 100 kg

D) 10 kg

(MARKS=2)

21. What is the required distance between explosive storage facilities and inhabited buildings? (PC10)

A) 5 meters

B) 20 meters

C) Varies based on quantity and type of explosive

D) No specific distance required

(MARKS=1)

22. Which of the following is a key requirement for the transportation of gas cylinders? (PC11)

A) Cylinders can be transported in any manner

B) Proper labelling and protective measures must be adhered to

C) No specific requirements for transport

D) Only small cylinders can be transported without restrictions

(MARKS=2)

23. What is the purpose of colour coding in gas cylinders? (PC11)

A) For aesthetic reasons

B) To indicate the type of gas contained

C) To differentiate sizes

D) No specific purpose

(MARKS=2)

24. What is the definition of a "boiler" under The Boilers Act? (PC12)

A) Any container for heating water

B) A closed vessel in which steam or hot water is generated

C) A device used for cooking

D) Any device that produces heat

(MARKS=2)

25. What type of certification is required for boiler operators? (PC12)

A) No certification needed

B) A specific boiler operator's certificate

C) A general engineering degree

D) Basic first aid certification

(MARKS=2)

26. What is the primary objective of the Workmen Compensation Act, 1923? (PC13)

A) To promote employee productivity

B) To provide financial compensation for work-related injuries

C) To manage workplace disputes

D) To regulate employment contracts

(MARKS=2)

27. Who is eligible for benefits under the Employees' State Insurance Act? (PC13)

A) Only government employees

B) All employees earning below a specified wage limit

C) Only employees with fixed contracts

D) Part-time workers only

(MARKS=2)

28. What does the Motor Vehicle Act, 1988 regulate? (PC14)

A) Air quality

B) Vehicle safety and standards

C) Employee insurance

D) Workplace conditions

(MARKS=2)

29. Which of the following is a valid reason for suspension of a driving license? (PC14)

A) Accumulation of traffic violation points

B) Change of residence

C) Obtaining a new vehicle

D) None of the above

(MARKS=2)

30. First Aid training in workplaces should cover: (PC15)

A) Only theoretical knowledge

B) Practical skills for emergency situations

C) Financial literacy

D) Environmental laws

(MARKS=2)

31. What is the role of a designated first aider in the workplace? (PC15)

A) To manage all workplace safety

B) To provide first aid and emergency assistance when needed

C) To lead the staff meetings

D) To conduct safety audits

(MARKS=2)

Section B: Practical Application

(40 Marks)

1. You are conducting a safety audit for a manufacturing facility that operates under ISO 45001 (Occupational Health and Safety Management Systems) and has to comply with local health and safety regulations. During your review of the facility's legal register, you notice that:

   Some recent changes in local regulations regarding workplace safety have not been updated in the legal register.

   There are several identified hazards in the workplace that are not addressed by existing safety measures.

   The organization has not conducted a recent risk assessment related to new equipment installed six months ago.

   Question:

   As the safety auditor, how would you address the following:

1. What steps would you recommend to ensure that the legal register is updated in compliance with ISO 45001 and local regulations?
2. How would you assess the impact of the identified hazards on the organization's compliance with legal requirements and its overall safety performance?

   What actions should the organization take regarding the risk assessment of the new equipment, and how does this align with both ISO 45001 and local safety standards?

SSD/VSQ/NO116: Plan, Organize & Monitor

Safety Auditor Certification Assessment Paper

Total Marks: 100

Time: 2 Hours

Section A: Multiple Choice Questions (MCQs)

(60 Marks)

Planning of Work

1. An effective project plan typically includes: (PC1)
A) Ambiguous goals
B) Clear objectives and timelines
C) Overlapping responsibilities
D) Unspecified resources

(MARKS=2)

2. The role of superiors in work planning includes: (PC1)

A) Creating chaos

B) Providing guidance

C) Avoiding responsibility

D) Focusing on personal agendas

(MARKS=2)

3. When planning a project, what does a Gantt chart primarily help with? (PC1)

A) Budget tracking

B) Visualizing the project timeline

C) Resource procurement

D) Stakeholder analysis

(MARKS=2)

4. What does the critical path in project scheduling indicate? (PC1)

A) The longest sequence of tasks

B) The shortest time to complete the project

C) Tasks that can be delayed without affecting the project

D) Non-essential tasks

(MARKS=2)

5. What is the purpose of a resource histogram? (PC1)

A) To track project costs

B) To visualize resource allocation over time

C) To identify risks

D) To define project scope

(MARKS=2)

6. What is the primary focus of a project kick-off meeting? (PC1)

A) To assign tasks

B) To establish timelines and milestones

C) To discuss budget constraints

D) To review past projects

(MARKS=2)

7. Which of the following is an example of upward communication? (PC2)

A) A manager giving feedback to an employee

B) An employee reporting issues to management

C) A team leader directing team members

D) A CEO sending a company-wide email

(MARKS=2)

8. What is one common barrier to effective communication within an organization? (PC2)

A) Clear hierarchy

B) Trust between employees

C) Ambiguous language and jargon

D) Defined roles

(MARKS=2)

9. What is the primary purpose of organizational charts? (PC2)

A) To define job descriptions

B) To illustrate the reporting structure and relationships

C) To track employee performance

D) To manage budgets

(MARKS=2)

10. Which factor is most critical when allocating tasks in a safety plan? (PC3)

A) Assigning tasks based on availability rather than expertise

B) Aligning tasks with employees' strengths and project safety objectives

C) Delegating all tasks to one team member

D) Ignoring the safety protocols

(MARKS=2)

11. What is the benefit of setting clear timelines for tasks? (PC3)

A) Increases confusion

B) Enhances productivity

C) Discourages teamwork

D) Reduces motivation

(MARKS=2)

12. How should feedback be given to subordinates after task completion? (PC3)

A) Only during performance reviews

B) In a constructive and timely manner

C) After a long delay

D) Only if the task was not done well

(MARKS=2)

Organizing of Work

13. When collecting resources, which factor is most important? (PC4)

A) Availability

B) Cost

C) Quality

D) All of the above

(MARKS=2)

14. Which of the following is an indicator of successful resource provisioning? (PC4)

A) Budget overruns

B) Timely project completion

C) Increased complaints

D) Lack of coordination

(MARKS=2)

15. What is 'resource levelling'? (PC4)

A) Reducing resources to save costs

B) Adjusting resources to avoid overallocation and conflicts

C) Increasing resource availability

D) Ignoring resource management

(MARKS=2)

16. Which of the following is an example of upward communication? (PC5)

A) A manager giving feedback to an employee

B) An employee suggesting improvements to a project

C) A team leader directing team members

D) A co-worker discussing plans with a peer

(MARKS=2)

17. Which method of communication is best for sensitive topics? (PC5)

A) Email

B) Face-to-face conversation

C) Group chat

D) Social media

(MARKS=2)

18. What should you do if a co-worker misunderstands your message? (PC5)

A) Blame them for not understanding

B) Clarify your message and provide additional information

C) Ignore the misunderstanding

D) Reiterate the same message

(MARKS=2)

19. Which of the following should be included in a briefing about a project schedule? (PC6)

A) Personal anecdotes

B) Key deadlines and milestones

C) Only the final deadline

D) Irrelevant details

(MARKS=2)

20. What should you do if a subordinate has questions during a briefing? (PC6)

A) Ignore them

B) Encourage questions to clarify understanding

C) Dismiss their concerns

D) Provide vague answers

(MARKS=2)

21. In a briefing, how should you present the sequence of tasks? (PC6)

A) In a random order

B) Chronologically, with dependencies clearly outlined

C) Only the final task

D) Vaguely

(MARKS=2)

Monitoring of Work

22. How often should project progress be monitored? (PC7)

A) Only at the end of the project

B) Regularly, based on the project timeline

C) Once a year

D) Whenever convenient

(MARKS=2)

23. Which of the following is NOT a benefit of regular progress monitoring? (PC7)

A) Early identification of issues

B) Improved accountability

C) Increased confusion

D) Enhanced project control

(MARKS=2)

24. What should a manager focus on during a progress review meeting? (PC7)

A) Assigning blame for delays

B) Discussing achievements, challenges, and next steps

C) Covering unrelated topics

D) Only focusing on negative outcomes

(MARKS=2)

25. Which format is commonly used for formal reporting in organizations? (PC8)

A) Informal chats

B) Emails and reports

C) Social media posts

D) Text messages

(MARKS=2)

26. When is it most appropriate to update your superiors? (PC8)

A) Only at the end of a project

B) Regularly, especially when key milestones are reached

C) Whenever you feel like it

D) Only during meetings

(MARKS=2)

27. What is the benefit of transparency in reporting? (PC8)

A) It creates distrust

B) It enhances collaboration and trust

C) It reduces accountability

D) It complicates the process

(MARKS=2)

28.Who is typically responsible for maintaining documentation? (PC9)

A) The project manager and team members

B) Only the team lead

C) External auditors only

D) It's not necessary

(MARKS=2)

29. What should be done after submitting a compliance report? (PC9)

A) Forget about it

B) Follow up to ensure it has been received and reviewed

C) Ignore any feedback

D) Criticize the review process

(MARKS=2)

30. What is the significance of deadlines in report submission? (PC9)

A) They are irrelevant

B) They ensure timely communication and compliance

C) They create unnecessary pressure

D) They can be ignored

(MARKS=2)

Section B: Practical Application

(40 MARKS)

Planning of Work

Scenario: Organizing a Corporate Training Program

You are the project coordinator for a corporate training program aimed at enhancing employee skills in digital marketing. The training is scheduled to take place over a four-week period, and your task is to ensure all aspects are planned and executed smoothly.

Key Components:

o   Training Duration: 4 weeks

o   Training Sessions:

o   Week 1: Introduction to Digital Marketing

- o Week 2: SEO and Content Strategy
- o Week 3: Social Media Marketing
- o Week 4: Analytics and Reporting
- o Participants: 50 employees from various departments

Team Members:

- o Training Manager (your supervisor)
- o Two Trainers
- o One Administrative Assistant
- o IT Support Specialist

Question:

PC1

1. Resource Planning: How would you plan the resources, including budget allocation, training materials, and venue arrangements, for each week of the training? Provide a breakdown of resources needed for each training session.

    (MARKS=8)

    PC2

2. Understanding Hierarchy: Describe how you would communicate with your training manager and other concerned co-workers. What information would you ensure to share with them regarding the training program, and how would you ensure their input is considered?

    (MARKS=4)

    PC3

3. Task Assignment: Based on the project requirements and the skills of your team members, how would you assign tasks to each member for the successful execution of the training program?

    (MARKS=4)

Organizing of Work

PC4

Scenario: Launching a New E-Commerce Website

You are the project manager tasked with launching a new e-commerce website for your company. The launch is scheduled in three months, and you need to ensure that all necessary resources are collected and provisioned effectively to meet the deadline

Key Components:

- o Team Members:
- o Web Developer
- o UI/UX Designer
- o Content Writer
- o Marketing Specialist
- o Major Tasks:
- o Website Design
- o Content Creation
- o Development

- Testing
- Marketing Launch

Question:

Resource Identification: What specific resources (software, tools, personnel, etc.) do you need for each major task in the project?

Provisioning Timeline: Create a timeline for when you need to secure each resource.

(MARKS=4)

PC5

Scenario: Preparing for a Company-wide Change Management Initiative

You are the project lead for a change management initiative aimed at implementing a new internal software system across the organization. This initiative will affect all employees, and effective communication is crucial to ensure a smooth transition.

Key Components:

Project Timeline: 6 months

Key Stakeholders:

Executive Team

Department Heads

IT Team

All Employees

Question:

Communication Plan Development: How would you develop a comprehensive communication plan for the initiative? Outline the key messages you need to convey to each group of stakeholders (executives, department heads, IT, and all employees).

(MARKS=4)

PC6

Scenario: Implementing a New Customer Relationship Management (CRM) System

You are the project manager responsible for implementing a new CRM system within your organization. The implementation will involve several phases over the next four months, and it's essential to ensure your team understands the schedule, sequence of tasks, timing, and resources required.

Key Components:

Project Timeline: 16 weeks

Team Members:

Two Business Analysts

One IT Specialist

One Training Coordinator

Major Phases:

Phase 1: Needs Assessment (Weeks 1-2)

Phase 2: System Configuration (Weeks 3-6)

Phase 3: Data Migration (Weeks 7-10)

Phase 4: User Training (Weeks 11-14)

Phase 5: Go Live and Support (Weeks 15-16)

Question:

Briefing Preparation: How will you prepare for the briefing session with your subordinates? What key information will you include about the project schedule, task sequence, and timing

Briefing Structure: Outline the structure of your briefing. How will you present the information to ensure clarity and engagement? What visual aids or tools will you use?

(MARKS=4)

Monitoring of Work

Scenario: Development of a Mobile Application

You are the project manager for the development of a new mobile application aimed at improving customer engagement. The project is scheduled to last six months, and you oversee a team of six members, including developers, designers, and a quality assurance tester.

Key Components:

o   Project Timeline: 24 weeks

o   Team Members:

o   3 Software Developers

o   1 UI/UX Designer

o   1 QA Tester

o   1 Project Coordinator

o   Major Phases:

o   Phase 1: Requirements Gathering (Weeks 1-4)

o   Phase 2: Design (Weeks 5-8)

o   Phase 3: Development (Weeks 9-16)

o   Phase 4: Testing (Weeks 17-20)

o   Phase 5: Launch (Weeks 21-24)

Question:

1.   Monitoring Progress: How will you monitor the progress of each phase of the project? What tools or methodologies will you use to ensure that tasks are completed on time, and resources are managed effectively? Describe your approach to holding regular check-ins with your team. (PC7)

(MARKS=4)

2. Reporting to Superiors: Outline how you will report progress to your superiors. What key performance indicators (KPIs) or metrics will you include in your updates, and how frequently will you provide reports? (PC8)

(MARKS=4)

3. Documentation and Compliance: What documentation will you maintain throughout the project to ensure compliance with company standards? Describe the types of documents you will create, how you will manage version control, and your process for report submission at the end of the project. (PC9)

(MARKS=4)

ASSESSMENT CRITERIA

DGT/VSQ/NO1O2: **Employability Skills (6O Hours)**

Safety Auditor Certification Assessment Paper

Total Marks: 50

Time: 2 Hours

Section A: Multiple Choice Questions (MCQs)

(2O Marks)

1. What is a key aspect of identifying employability skills? (Introduction to Employability Skills)

A) Knowing only technical skills

B) Understanding the industry's requirements

C) Focusing only on academic qualifications

D) Ignoring personal strengths

(MARKS=1)

2. What does LEED stand for in sustainable building practices? (Constitutional values – Citizenship)

A) Leadership in Energy and Environmental Design

B) Local Energy and Environmental Development

C) Legal Energy and Economic Development

D) Low Emission and Energy Design

(MARKS=1)

3. Learning to learn is crucial for: (Becoming a Professional in the 21st Century)

A) Lifelong personal development

B) Completing a single task

C) Avoiding new challenges

D) Relying on others

(MARKS=2)

4. If you see a sign that says "No Smoking," what does it mean? (Basic English Skills)

A) You can smoke.

B) Smoking is not allowed.

C) You must smoke outside.

D) Smoking is encouraged.

(MARKS=2)

5. A career development plan should include: (Career Development & Goal Setting)

A) Only educational goals

B) Short- and long-term objectives

C) No specific targets

D) Only personal interests

(MARKS=1)

6.How should you use body language during a conversation? (Communication Skills)

A) Cross your arms to show you are listening

B) Use open gestures to show engagement

C) Avoid eye contact to appear disinterested

D) Turn away from the speaker to show you are busy

(MARKS=2)

7. When speaking to a person who uses a wheelchair, you should: (Diversity & Inclusion)

A) Stand above them and talk down

B) Sit or kneel to be at eye level, if appropriate

C) Avoid eye contact to respect their space

D) Use a loud voice because they can't move easily

(MARKS=1)

8. What is a credit score? (Financial and Legal Literacy)

A) A score for your academic performance

B) A measure of your creditworthiness

C) A type of investment score

D) A bank's profit margin

(MARKS=2)

9. What is the purpose of antivirus software? (Essential Digital Skills)

A) To speed up your computer

B) To protect against malware and viruses

C) To organize files

D) To browse the internet

(MARKS=1)

10. Which of the following is a good practice for writing a professional email? (Essential Digital Skills)

A) Using a casual tone and slang

B) Including a clear subject line

C) Writing long paragraphs without breaks

D) Not using a greeting

(MARKS=2)

11. Which research method is often used to assess market opportunities for a new business? (Entrepreneurship)

A) Historical analysis

B) Surveys and questionnaires

C) Personal opinions

D) Guesswork

(MARKS=2)

12. What characterizes a brand loyal customer? (Customer Service)

A) They switch brands frequently

B) They buy only when there are sales

C) They consistently choose the same brand over others

D) They make purchasing decisions based on convenience

(MARKS=1)

13. How can you prepare for an apprenticeship interview?

A) Dress casually and show up late

B) Research the company and practice common interview questions

C) Avoid making eye contact

D) Bring your friends to support you

(MARKS=2)

Section B: Practical Application

(3O Marks)

Employability Skills, Constitutional values, Professionalism, English Skills, Career Development & Goal Setting

Scenario-Based Question:

You are a project manager at a mid-sized organization tasked with leading a diverse team on a critical project with a tight deadline. Your team members come from different cultural backgrounds, and you notice some communication challenges that are affecting teamwork and productivity.

Question:

1. Employability Skills: Describe how you would identify and address the communication barriers within your team. What specific strategies would you implement to ensure effective collaboration?
2. Constitutional Values: How would you promote inclusivity and respect for diversity among your team members while working on the project?
3. Professionalism: What professional behaviours would you model to encourage accountability and commitment within the team? Provide examples of how these behaviours can impact the project outcome.
4. English Skills: If you need to deliver a presentation to stakeholders about the project's progress, what key points would you include, and how would you ensure your message is clear and persuasive?

5. Career Development & Goal Setting: After the project's completion, how would you assess your own performance and identify areas for your professional growth? What goals would you set for your next career move?

(MARKS=11)

Communication Skills, Diversity & Inclusion, Financial and Legal Literacy, Essential Digital Skills

Scenario-Based Question:

You are the team lead in a start-up that focuses on developing a new app aimed at enhancing financial literacy among underserved communities. Your team consists of individuals from various cultural and professional backgrounds, and you need to ensure everyone contributes effectively while addressing the project's financial and legal aspects.

Question:

1. Communication Skills: Describe how you would facilitate open communication within your team to ensure everyone's ideas are heard and valued. What methods would you use to encourage feedback and collaboration?
2. Diversity & Inclusion: How would you ensure that the app reflects the diverse needs of the target communities? Provide examples of how you would incorporate diverse perspectives in the development process.
3. Financial and Legal Literacy: Identify the key financial and legal considerations you need to address before launching the app. How would you ensure your team understands these aspects and complies with relevant regulations?
4. Essential Digital Skills: Discuss the digital tools and platforms you would utilize to manage the project effectively. How would you ensure that all team members are proficient in using these tools?
5. Integration: Reflect on how successfully addressing these areas (communication, diversity, financial/legal literacy, and digital skills) can impact the overall success of the app. What metrics would you use to evaluate this success?

(MARKS=11)

Entrepreneurship, Customer Service, apprenticeship & jobs

Scenario-Based Question:

You have recently launched a small business that offers eco-friendly products. As a new entrepreneur, you are looking to establish a strong customer service framework while also creating apprenticeship opportunities for young professionals in your community.

Question:

1. Entrepreneurship: Describe the steps you would take to identify your target market and develop a unique selling proposition (USP) for your eco-friendly products. How would you leverage this information to grow your business?
2. Customer Service: What customer service strategies would you implement to ensure high customer satisfaction? Provide specific examples of how you would handle customer complaints and feedback.
3. Apprenticeships: Explain how you would design an apprenticeship program within your business. What skills and knowledge would you prioritize for apprentices, and how would you ensure they gain valuable experience?
4. Jobs Creation: Discuss how your business model could contribute to job creation in your community. What approaches would you take to attract and retain talent?
5. Integration: Reflect on how effective customer service and a well-structured apprenticeship program can enhance your business's reputation and contribute to its long-term sustainability. What metrics would you use to measure success in these areas?

(MARKS=8)

12. References

Helpful Resources:

- **OSHA** : Occupational Safety and Health Administration

- **HSE** : Health and Safety Executive (UK)

- **ACOSH** : Advisory Committee on Occupational Safety and Health (US)

- **ILO** : International Labour Organization

- **ISO 45001:2018** : Occupational Safety and Health Management System

- **IS 14489:1998`** : Safety Audit Questionnaire

By reviewing these questions and consulting relevant resources, you can enhance your understanding of health and safety statutes and legislative requirements.

Enforcement:

OSHA conducts inspections to ensure compliance with the OSH Act and its standards. OSHA can issue citations and penalties to employers who violate the law.

Additional resources:

- **OSHA website:** https://www.osha.gov/

- **OSHA standards database:** https://www.osha.gov/data

- **OSHA training resources:** https://www.osha.gov/training

- **OSHA hotline:** 1-800-321-OSHA (6742)

By understanding the compliance requirements of the OSH Act, employers can create a safe and healthful workplace for their employees.

Additional Resources:

- **HSE website:** https://www.hse.gov.uk/legislation/hswa.htm

- **Legislation.gov.uk:** https://www.legislation.gov.uk/ukpga/1974/37/contents

Remember:

- HASAWA is a framework law, and there are many other specific regulations that apply to different workplaces and industries.

- It is essential to stay up-to-date with the latest health and safety regulations and guidance.

- If you are unsure about your compliance obligations, you should seek professional advice.

The development of this handbook on Occupational Safety and Employability Skills was informed by a wide range of authoritative sources, including industry standards, academic literature, government regulations, and practical guides. The following references were instrumental in shaping the content of this book:

Books:

- **Asfahl, C. Ray, and David W. Rieske.** *Industrial Safety and Health Management*. 7th ed., Pearson, 2010.

    A comprehensive guide on managing safety and health in industrial settings, offering insights into risk management, safety culture, and legal compliance.

- **Reese, Charles D.** Occupational Health and Safety Management: A Practical Approach. 3rd ed., CRC Press, 2016.

    This book provides practical strategies for implementing effective occupational safety and health programs, emphasizing real-world application.

- **Brauer, Roger L.** *Safety and Health for Engineers*. 3rd ed., Wiley, 2016.

    A detailed resource focused on the principles of safety engineering and the integration of safety practices into engineering processes.

- **Covey, Stephen R.** *The 7 Habits of Highly Effective People*. 25th Anniversary ed., Simon & Schuster, 2013.

    A classic book on personal and professional development, which influenced sections on leadership, communication, and goal setting in this handbook.

- **Gilster, Paul.** Digital Literacy: Skills for the Connected World. Wiley, 1997.

This foundational text on digital literacy provided valuable insights into the skills necessary for navigating the digital landscape in modern workplaces.

- **Cullen, Christel.** Principles of Risk Assessment: A Practical Guide to Safety and Health Management. 1st ed., Springer, 2019.

  A practical guide on conducting risk assessments and managing workplace safety, used to inform the risk management sections of this book.

Articles:

- **Safety+Health Magazine.** "Best Practices in Occupational Safety and Health."

  This article provided practical examples and case studies that were integrated into the best practices sections of the handbook.

- **EHS Today.** "The Financial Impact of Workplace Accidents: Understanding the Hidden Costs."

  An insightful piece on the direct and indirect costs of workplace accidents, which shaped the discussion on financial implications in the book.

- **Harvard Business Review.** "Mastering Communication Skills for the Workplace."

  The article offered strategies for improving communication in professional settings, which were adapted for the communication skills sections.

- **EHS Today.** "The Role of Risk Assessment in Preventing Workplace Accidents."

  This article highlighted the importance of risk assessments and informed the practical guidance provided in the risk management chapters.

Online Resources:

- **Occupational Safety and Health Administration (OSHA).** *Guidelines and Standards*. www.osha.gov

  OSHA guidelines and standards were extensively used to ensure that the safety practices discussed align with current regulatory requirements.

- **International Labour Organization (ILO).** *Occupational Safety and Health Standards*. www.ilo.org

  The ILO's guidelines provided a global perspective on safety standards, influencing the international standards sections.

- **National Institute for Occupational Safety and Health (NIOSH).** *Workplace Safety and Health Topics*. www.cdc.gov/niosh

  NIOSH resources contributed to the discussions on workplace safety practices and the latest safety research.

- **Safety+Health Magazine.** www.safetyandhealthmagazine.com

  Regularly referenced for current trends and developments in occupational safety and health.

- **LinkedIn Learning.** www.linkedin.com/learning

  Courses on communication, digital literacy, and career development offered valuable insights that were incorporated into the employability skills sections.

- **Coursera.** www.coursera.org

  Online courses in safety management and digital skills provided additional context for several chapters in this handbook.

12.1.   Reference Materials

For those interested in deepening their knowledge of occupational safety, health, and employability skills, the following reference materials are recommended. These resources include books, articles, and online platforms that provide comprehensive information and guidance on these topics.

Books:

- **"Industrial Safety and Health Management" by C. Ray Asfahl and David W. Rieske:** A comprehensive guide to managing safety and health in industrial settings, covering risk management, legal requirements, and safety culture.

- **"Occupational Health and Safety Management:** A Practical Approach" by Charles D. Reese: This book offers practical strategies for implementing effective occupational safety and health programs in the workplace.

- **"Safety and Health for Engineers" by Roger L. Brauer:** A detailed resource for engineers and safety professionals that covers the principles of safety engineering and management.

- **"The 7 Habits of Highly Effective People" by Stephen R. Covey:** A classic book on personal and professional development, focusing on habits that lead to success in both life and work.

- **"Digital Literacy:** Skills for the Connected World" by Paul Gilster: A foundational text on digital literacy, providing insights into the skills needed to navigate the digital landscape effectively.

Articles:

- **"Best Practices in Occupational Safety and Health" (Safety+Health Magazine):** An article that explores effective strategies for maintaining safety and health in the workplace, with real-world examples and case studies.

- **"The Financial Impact of Workplace Accidents:** Understanding the Hidden Costs" (EHS Today): This article examines the direct and indirect costs associated with workplace accidents and the importance of accident prevention.

- **"Navigating Occupational Safety Regulations in India" (Safety+Health Magazine):** A guide to understanding and complying with safety regulations in India, with practical tips for safety professionals.

- **"Mastering Communication Skills for the Workplace" (Harvard Business Review):** An article that discusses the importance of communication skills in the workplace and provides strategies for improvement.

Online Resources:

- **Occupational Safety and Health Administration (OSHA) Guidelines:** www.osha.gov The official website of OSHA, offering comprehensive guidelines, standards, and resources on workplace safety and health.

- **International Labour Organization (ILO) Occupational Safety and Health Standards:** www.ilo.org The ILO's platform for occupational safety and health standards, providing global guidelines and resources.

- **LinkedIn Learning:** www.linkedin.com/learning An online learning platform offering courses on communication, digital literacy, safety management, and more.

- **Khan Academy:** www.khanacademy.org A free online educational platform offering courses on financial literacy, career development, and other key skills.

    Coursera: www.coursera.org An online platform that provides access to courses on career development, digital skills, safety management, and more, from leading universities and institutions.