

One Year Post Diploma in Industrial Safety**Branch: Industrial Safety****Subject: Safety Engineering – I****Time : 3 Hrs.****Maximum Marks: 100****Section –A****Note: Multiple Choice questions. All questions are compulsory.****10x1=10**

- Q.1 What's the difference between the point of operation and the power transmission apparatus?
- The POO is where the machine works on the materials fed into the machine; the PTA transfers mechanical energy throughout the machine to move machine parts.
 - The PTA is electrical energy; the POO is mechanical energy.
 - The POO uses rolling motion; the PTA uses reciprocating motion.
 - There is no difference
- Q.2 Installing a machine in a place where no one can contact moving parts is an example of:
- An interlock.
 - Safety restraints
 - Guarding by location
 - An awareness barrier
- Q.3 What is the optimum height for heavy objects that are being moved in and out of storage?
- Floor level
 - Waist height
 - Shoulder height
 - Head height
- Q.4 Which of the following information about a hazardous material can be found on a Material Safety Data Sheet (MSDS)?
- Physical and chemical properties
 - All hazards regarding the material
 - Precautions for safe handling and storage
 - All of the above
- Q.5 What should you never do when carrying a load on forklifts?
- Adjust forks so that the load is 6 to 10 inches above the ground
 - Drive the forklift slowly and with clear vision of the pathway
 - Keep forks tilted back
 - Carry some light load on the overhead guard
- Q.6 What are the three Fall Prevention Systems for work at height?
- Full body harness, anchorage and connectors
 - Top rail, mid rail and toe-board
 - Safety net, harness and lifeline
 - None of the above
- Q.7 Before installing a new abrasive wheel on a portable hand-held grinder, you are required to:
- Inspect wheel for cracks and damage.
 - Check RPM rating to ensure it is right for the grinder.
 - Perform a "ring test" to determine if the wheel is cracked.
 - All of the above.
- Q.8 Which is not a part of preventive maintenance?
- Routine maintenance
 - Periodic maintenance
 - Overhaul
 - None of above
- Q.9 Which step of the 5s-concept refers "Standardization"?
- Step - 1
 - Step - 2
 - Step - 5
 - Step - 4

- Q.10 Section 25 of the Factories Act, 1948 contains provisions on _____
a) Employment of young person's on dangerous machines
b) Striking gears and devices for cutting off power
c) Self-acting machines
d) Work on or near machinery in motion

Section-B

Note: Objective type questions. All questions are compulsory.

10x1=10

- Q.11 Which section of The Factories Act, 1948 mention about "Fencing of Machinery"?
- Q.12 Two hand Control is an example of Incident Safety Device. (True or False)
- Q.13 Any distortion causing an increase in throat opening exceeding 5% or as otherwise directed by the hook manufacture is known as _____.
- Q.14 _____ is a device used to suspend a person from a rope to perform work aloft.
- Q.15 As per Section 29 of The Factories Act 1948, all parts, including the working gear, whether fixed or movable, of every lifting machine and every chain, rope or lifting tackle shall be thoroughly examined by a competent person at least once in every period of _____ months.
- Q.16 As per The Factories Act 1948, _____ is a person or an institution recognized as such by the Chief Inspector for the purposes of carrying out tests, examinations and inspections required to be done in a factory
- Q.17 In many cases, wire rope is subjected to impact loads which send axial and torsional responses up and down the rope. If the loads are severe enough, the outer strands can separate from the core in a permanent manner and thus render the rope useless. Such a phenomenon is generally known as _____.
- Q.18 _____ is the act of performing regularly scheduled maintenance activities to help prevent unexpected failures in the future.
- Q.19 Tools made of metals such as brass, bronze, Monel metal (copper-nickel alloy), copper-aluminum alloys (aluminum bronze), or copper-beryllium alloys (beryllium bronze) are known as _____
- Q.20 You should only attempt to repair a conveyor that isn't locked and tagged when you have a co-worker assist you with the work. (True or False)

Section –C

Note: Short answer type Questions. Attempt any twelve questions out of fifteen questions.
12x5=60

- Q.21 Purchasing policy
- Q.22 Safety devices to be used for belt conveyor
- Q.23 Improving safety and productivity through work place design
- Q.24 Role of preventive maintenance in accident prevention
- Q.25 Inspection and testing of hand tools.
- Q.26 Safe Construction and use of stairways, ramps, and ladders and preferred angle for stairways, ramps and ladder.
- Q.27 Differentiate between hoist and EOT Crane.
- Q.28 Safe use and maintenance of wire rope slings.
- Q.29 Control measures against the human errors.
- Q.30 Hazards associated with power presses.
- Q.31 Safe storage of materials.
- Q.32 Potential tripping and slipping hazards.
- Q.33 Discuss the importance of standards and code of practices for the plant and equipment
- Q.34 Design a permit system for Height Work
- Q.35 Riving Knife

Section-D

Note: Long answer questions. Attempt any two questions out of three questions.

2x10=20

- Q.36 Prepare and describe the checklist for inspection of EOT crane and explain the various elements of checklist.
- Q.37 Write down the principles of machine guarding, including the type machine guards and quality of good machine guards.
- Q.38 Describe the various types of portable power hand tools. Write in detail the hazards and necessary safety precautions in use of power hand tools.