

# CBCS SCHEME

USN

--	--	--	--	--	--	--	--	--	--

15MN561

Fifth Semester B.E. Degree Examination, Dec.2018/Jan.2019

## Industrial Safety Engineering

Time: 3 hrs.

Max. Marks: 80

**Note:** Answer any FIVE full questions, choosing ONE full question from each module.

### Module-1

- 1 a. Define Re – crystallization temperature. How hot and cold working of metals can be differentiated? Explain in detail. (04 Marks)
- b. What are the steps involved in casting operation? Explain hazards and safety measures involved in casting. (04 Marks)
- c. Explain steps involved in forging operation. What are the major hazards involved in forging? Suggest safety measures to mitigate hazards. (04 Marks)
- d. Explain Rolling mill operation. List out differences between hot and cold rolling mills. (04 Marks)

### OR

- 2 a. Explain the following heat treatment process briefly :  
i) Annealing    ii) Normalising    iii) Quenching    iv) Tempering. (08 Marks)
- b. Explain the following power presses with a neat sketch :  
i) Shearing    ii) Bending    iii) Drawing    iv) Turning. (08 Marks)

### Module-2

- 3 a. What are confined spaces? List out the hazards and suggest the safety measures for confined spaces. (04 Marks)
- b. List out the hazards and safety measures to be taken while carrying out the painting process. (04 Marks)
- c. List out the hazards and suggest safety measures to be taken while welding and cutting operation of metals. (04 Marks)
- d. What is Soldering? Explain Hazards and Safety measures involved in it. (04 Marks)

### OR

- 4 a. Explain the following metal finishing operations in brief.  
i) Cleaning    ii) Polishing    iii) Buffing. (06 Marks)
- b. What is Shot blasting? Explain different types of shot blasting, with a neat sketch. (10 Marks)

### Module-3

- 5 a. State and explain high incidence of serious accidents in working at height. (08 Marks)
- b. With a neat sketch, explain construction of stairways. (04 Marks)
- c. With a neat sketch, explain Ramps and Ladders. (04 Marks)

### OR

- 6 a. With a neat sketch, explain construction of Boatswain's Chair – Safety harness. (06 Marks)
- b. With a neat sketch, explain construction of tubular scaffold. (04 Marks)
- c. Explain hazards which are involved in underground work such as drilling and blasting and suggest safety measures to mitigate the hazard. (06 Marks)

important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.  
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8=50, will be treated as malpractice.

**Module-4**

- 7 a. State and explain hazards that are involved in mining industry and suggest safety measures to suppress the hazard. (08 Marks)  
b. State and explain hazards that are involved in cement industry and suggest safety measures to suppress the hazards. (08 Marks)

**OR**

- 8 a. List out the various hazards involved in textile industry and suggest safety measures to mitigate the hazards. (08 Marks)  
b. List out the various hazards involved in Tanneries and suggest safety measures to suppress the hazards. (08 Marks)

**Module-5**

- 9 a. List out the hazards involved in hospitals and suggest safety measures to mitigate the hazards. (08 Marks)  
b. List out the hazards involved in Robots industry and suggest safety measures to mitigate the hazards. (08 Marks)

**OR**

- 10 a. List out the hazard and safety measures involved in Nano technology and suggest safety measures to mitigate the hazard. (08 Marks)  
b. Write a note on Guidelines and Safety standards to be followed in industries as per OHSAS i.e Occupational Health and Safety Assessment Specification. (08 Marks)

\* \* \* \* \*