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# B.M.S. College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

## May / June 2025 Semester End Main Examinations

**Programme: B.E.**

**Semester: VIII**

**Branch: Institutional Elective**

**Duration: 3 hrs.**

**Course Code: 22CH8OEISO**

**Max Marks: 100**

**Course: Industrial Safety and Occupational Health**

**Instructions:** 1. Answer any FIVE full questions, choosing one full question from each unit.  
2. Missing data, if any, may be suitably assumed.

			<b>UNIT - I</b>	<b>CO</b>	<b>PO</b>	<b>Marks</b>
<b>Important Note:</b> Completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. Revealing of identification, appeal to evaluator will be treated as malpractice.	1	a)	Elucidate on internal audit and management review in ISO45001 for the organization's OH&S management system.	CO1	PO 6	<b>10</b>
		b)	Why does "worker participation" come together with "leadership" in PDCA cycle?	CO2	PO 7	<b>10</b>
<b>OR</b>						
	2	a)	How can an autocratic leadership style in an organization be overcome/handled while implementing the workers participation aspect of the standard? This has been a challenge in some of the ISO 45001 implementation projects as leadership commitment is key to realize full conformity to the standard requirements.	CO3	PO8	<b>10</b>
		b)	The success of the OH&S management system depends on leadership, commitment and participation from all levels and functions of the organization. Write ten factors involved in success of the OH&S management system.	CO4	PO9	<b>10</b>
			<b>UNIT - II</b>			
	3	a)	Explain the history of the safety movement and Factory act 1948 Legislation in India.	CO1	PO6	<b>10</b>
		b)	What is human factor engineering? Explain the three distinct elements of human safety factors.	CO6	PO12	<b>10</b>
<b>OR</b>						
	4	a)	What are the common personal protective equipment (PPE) used in industries? Explain the need and limitations of PPEs.	CO1	PO6	<b>10</b>
		b)	Explain the salient features of Gas Cylinders Rules, 2004.	CO1	PO6	<b>10</b>

<b>UNIT - III</b>					
5	a)	Hazard and Operability (HAZOP) can be conducted to check the designs or operating procedures for a new project. Explain HAZOP for a new project study.	CO1	PO6	<b>10</b>
	b)	Explain event tree analysis of safety warning system with an example.	CO6	PO12	<b>10</b>
<b>OR</b>					
6	a)	In a paint manufacturing facility, a fire broke out in the storage area due to poor segregation of flammable solvents and improper earthing of drum filling stations. The fire caused substantial material damage and halted operations for 10 days. Using Checklist Analysis and Safety Review, <ol style="list-style-type: none"> <li>i. Identify what should have been included in the safety audit of the storage facility,</li> <li>ii. Highlight the overlooked safety parameters, and</li> <li>iii. Recommend corrective actions to avoid such incidents in future audits.</li> </ol>	CO3	PO8	<b>10</b>
	b)	Describe the systematic methodology for conducting a comprehensive hazard assessment in an industrial setup.	CO3	PO8	<b>10</b>
<b>UNIT - IV</b>					
7	a)	Explain the various purposes of accident investigation.	CO5	PO10	<b>10</b>
	b)	Write a detailed list of procedure steps that are followed in accident Analysis.	CO6	PO12	<b>10</b>
<b>OR</b>					
8	a)	Describe about different agencies participating in investigating accidents.	CO1	PO6	<b>10</b>
	b)	In detail, explain the content of accident investigation report.	CO5	PO10	<b>10</b>
<b>UNIT - V</b>					
9	a)	Explain how to establish electrically safe work conditions.	CO3	PO8	<b>10</b>
	b)	What are the responsibilities of employers and employees while performing work on energized electrical equipment?	CO1	PO6	<b>10</b>
<b>OR</b>					
10	a)	Highlight the provisions made in the Indian electricity act pertaining to safety.	CO1	PO6	<b>10</b>
	b)	Explain the construction and safety guidelines of earth pits.	CO6	PO12	<b>10</b>

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