Reg. No.															

Question Paper Code	14276

M.E. / M.Tech. - DEGREE EXAMINATIONS, NOV / DEC 2025

First Semester

M.E. - Industrial Safety Engineering

24PISPC103 - OCCUPATIONAL HEALTH AND INDUSTRIAL HYGIENE

Regulations - 2024

Duration: 3 Hours Max. Marks: 100

PART - A (MCQ) (10 × 1 = 10 Marks)

Answer ALL Questions

		Marks	K – Level	CO
1.	The instrument used to analyse noise into different frequency bands is called (a) Dosimeter (b) Sound level meter (c) Octave band analyser (d) Vibration meter	1	K1	CO1
2.	Which type of vibration is mainly caused by the use of handheld power tools like grinders and drills? (a) Whole-body vibration (b) Hand–arm vibration (c) Rotational vibration (d) Surface vibration	1	K1	CO1
3.	Which of the following is an example of an engineering control for air contaminants? (a) Job rotation (b) Local exhaust ventilation (c) Worker training (d) Use of respirators	1	K1	CO2
4.	A personal air sampling pump is used to: (a) Measure sound pressure level (b) Collect air samples directly from a worker's breathing zone (c) Detect gas leaks in machinery (d) Monitor temperature and humidity	1	K1	CO2
5.	The main function of a biological safety cabinet (BSC) is to: (a) Filter and sterilize laboratory glassware (b) Provide protection to personnel, product, and environment from biohazards (c) Store biological samples safely (d) Control chemical vapors in fume hoods	1	K1	CO3
6.	Which of the following is NOT a component of a biohazard control program? (a) Employee health program (b) Animal care and handling procedures (c) Regular calibration of electrical instruments (d) Laboratory safety program	1	K1	CO3
7.	Silicosis is an occupational disease caused by prolonged inhalation of: (a) Asbestos fibers (b) Coal dust (c) Silica dust (d) Iron oxide fumes	1	K1	CO4
8.	The secondary level of prevention in occupational health aims at: (a) Promoting general health and preventing disease occurrence (b) Early detection and prompt treatment of disease (c) Rehabilitation of affected workers (d) Enforcing safety legislation only	1	K1	CO4
9.	Aerobic work primarily depends on: (a) Oxygen supply and endurance capacity (b) Anaerobic glycolysis (c) High-intensity, short-duration effort (d) Mental concentration only	1	K1	CO5
10.	The main purpose of rest pauses during work is to: (a) Decrease motivation (b) Increase fatigue (c) Allow recovery from physiological strain and reduce fatigue (d) Disturb work continuity	1	K1	CO6

PART - B (12 × 2 = 24 Marks)

Answer ALL Questions

11.	Compare physical and chemical hazards.	2	K1	CO1
12.	State "Chill Index ".	2	K2	CO1

13.	Differentiate exposure and dose in chemical hazards.	2	K1	CO2
14.	How to identify gas leakage?	2	K1	CO2
15.	Represent the significance of laboratory safety program.	2	K1	CO3
16.	Expand CTS and give its mean.	2	K2	CO3
17.	Give example for anaerobic.	2	K1	CO4
18.	Write the uses of shift work.	2	K1	CO4
19.	Give the impact of Physiology.	2	K1	CO5
20.	Represent the industrial definition " rest pause" .	2	K1	CO5
21.	List any two air sampling instruments used in industrial hygiene.	2	K1	CO6
22.	Why study of industrial health is necessary in Indian industry?	2	K1	CO6

PART - C (6 × 11 = 66 Marks)

Answer ALL Questions

23.	a)	Explain the principle of industrial audiometry, hearing conservation and ironizing radiation with examples.	11	K2	CO1
		OR			
	b)	Discuss the following terms in fact of physical hazards 1. Control measure for hot environments 2. Radio waves and lasers 3. TLV Environments	11	K2	CO1
24.	a)	Classify air sampling instruments. Explain its function with example. Mention its merits and demerits in chemical hazards.	11	K3	CO2
		OR			
	b)	Explicate design maintenance consideration sand specifications with one case study. Also, give the procedure for training and education for control sampling methods.	11	K3	CO2
25.	a)	Explain the biological hazard agents and its effects with industrial example and analysis its usage for workers.	11	K3	CO3
		OR			
	b)	Discuss the concept of work related Musculoskeletal Disorder with industry case study and summarize a interpretation results from case.	11	K3	CO3
26.	a)	Explain the functional units and activities of occupational health service with case study of an employment medical examinations.	11	K3	CO4
		OR			
	b)	Explain the symptoms, causes and preventive measures of asbestosis.	11	K3	CO4
27.	a)	Elaborate the duties of an employer in maintaining occupational safety.	11	K3	CO5
		OR			
	b)	Explain the physiological effects of stress, strain, and fatigue on industrial workers. Suggest suitable control and preventive measures to maintain efficiency.	11	K3	CO5
28.	a)	Explain the main functions and activities of occupational health services. How are pre-employment and regular medical check-ups carried out?	11	K3	CO6
		OR			
	b)	Explain the concept of toxic materials and protective mechanisms with case study of measuring and evaluation health hazards.	11	K3	CO6