

SRM VALLIAMMAI ENGINEERING COLLEGE

(An Autonomous Institution)

SRM Nagar, Kattankulathur – 603203

DEPARTMENT OF MEDICAL ELECTRONICS

QUESTION BANK



VI SEMESTER

PMD203 HOSPITAL WASTE MANAGEMENT

Regulation – 2023

Academic Year 2025–2026 (ODD)

Prepared by

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SUBJECT : PMD203 HOSPITAL WASTE MANAGEMENT

SEM/ YEAR : VI /III

UNIT I – HAZARDOUS MATERIALS				
Hazardous Materials: Hazardous Substance Safety, OSHA Hazard Communication Standard, DOT Hazardous Material Regulations, Healthcare Hazardous Materials, Medical Gas Systems, Respiratory Protection.				
PART-A				
Q.No	Questions	CO	BT Level	Domain
1.	What is the need for hospital waste management?	CO1	BTL1	Remembering
2.	Mention the steps involved in medical waste management.	CO1	BTL2	Understanding
3.	List some of the hazardous materials.	CO1	BTL1	Remembering
4.	Categorize the hospital wastes.	CO1	BTL2	Understanding
5.	Give example for infectious materials.	CO1	BTL2	Understanding
6.	State some of the radioactive waste.	CO1	BTL1	Remembering
7.	Which materials are categorized under sharp wastes in hospital?	CO1	BTL1	Remembering
8.	Specify the various colors used to categorize the hospital waste.	CO1	BTL2	Understanding
9.	Black bins are how it differs from other bins in medical waste.	CO1	BTL1	Remembering
10.	Write down the four types of hospital waste.	CO1	BTL2	Understanding
11.	Point out the key aspects of hazardous substance safety in hospital waste management.	CO1	BTL1	Remembering
12.	Brief about OSHA HCS.	CO1	BTL2	Understanding
13.	Short note about DOT compliance.	CO1	BTL1	Remembering
14.	When the biomedical waste act implemented in India? Is there any latest amendment?	CO1	BTL2	Understanding
15.	How healthcare hazardous materials influence human life?	CO1	BTL1	Remembering
16.	Enumerate the impact of hazardous materials in environment.	CO1	BTL2	Understanding
17.	Classify the medical gases with their chemical symbols.	CO1	BTL1	Remembering
18.	Summarize the steps involved in handling medical gases.	CO1	BTL2	Understanding
19.	Write few applications of medical gases.	CO1	BTL1	Remembering
20.	Show the importance of nitrous oxide medical system.	CO1	BTL2	Understanding
21.	Enlist the hazards associated with medical gases.	CO1	BTL1	Remembering
22.	Identify the importance of respiratory protection system.	CO1	BTL2	Understanding
23.	Differentiate APR and ASR in respiration.	CO1	BTL1	Remembering
24.	Contrast PPE and RPE.	CO1	BTL2	Understanding

PART-B					
1.	Mention the different types of medical waste, write detail note about each.	(16)	CO1	BTL3	Applying
2.	Explain the different types of color bin system used for medical waste management. What is the need of it?	(16)	CO1	BTL4	Analyzing
3.	Elaborate in detail about OSHA HCS.	(16)	CO1	BTL3	Applying
4.	What are the steps involved in hazardous substance safety, brief about each.	(16)	CO1	BTL4	Analyzing
5.	Discuss in detail about any three classes of hazard labeling also give note about its sub classes.	(16)	CO1	BTL3	Applying
6.	Illustrate about DOT Hazardous Material Regulations,	(16)	CO1	BTL4	Analyzing
7.	Categorize the nine DOT hazard classes and draw their symbols.	(16)	CO1	BTL3	Applying
8.	Explore the key aspects of DOT compliance in medical waste management	(16)	CO1	BTL4	Analyzing
9.	Summarize about Indian standard of medical waste management.	(16)	CO1	BTL3	Applying
10.	Describe about BMW rules 2016 and 2018.	(16)	CO1	BTL4	Analyzing
11.	What are the risks associated with healthcare hazardous materials? Explain each.	(16)	CO1	BTL3	Applying
12.	Analyze the impact of healthcare hazardous materials in ecological system.	(16)	CO1	BTL4	Analyzing
13.	Illustrate the components of a Medical Gas Pipeline System.	(16)	CO1	BTL3	Applying
14.	Mention the different types of medical gases and their applications.	(16)	CO1	BTL4	Analyzing
15.	Show the dangers associated with handling medical gases in detail.	(16)	CO1	BTL3	Applying
16.	Demonstrate the working principle of respiratory protection system.	(16)	CO1	BTL4	Analyzing
17.	Classify the different types of respiratory protection system with short note.	(16)	CO1	BTL3	Applying

UNIT II – HAZARD CONTROL					
Healthcare Hazard Control: Introduction, Hazard Control: Management & Responsibilities, Hazard Analysis, Hazard Correction, Personal Protective Equipment, Hazard Control Committees, Accident Causation Theories, Accident Reporting, Accident Investigations, Accident Analysis, Accident Prevention, Workers' Compensation, Orientation, Education, and Training.					
PART-A					
Q. No	Questions	CO	BT Level	Competence	
1.	What is the need of hazard control in health care system?	CO2	BTL1	Remembering	
2.	Short note the terms 'Safety' and 'Hazard'.	CO2	BTL2	Understanding	
3.	Specify the role of biomedical engineer in medical hazard control.	CO2	BTL1	Remembering	
4.	Give examples of healthcare hazard control.	CO2	BTL2	Understanding	
5.	State the term medical hazard management.	CO2	BTL2	Understanding	
6.	Mention the responsibilities of handling medical hazards.	CO2	BTL1	Remembering	
7.	Why medical hazard analysis is important?	CO2	BTL1	Remembering	
8.	Brief the term hazard identification.	CO2	BTL2	Understanding	
9.	Point out about assessment procedure for medical hazards.	CO2	BTL1	Remembering	
10.	Write note about hazard correction.	CO2	BTL2	Understanding	
11.	Specify the importance of GHS.	CO2	BTL1	Remembering	
12.	Show the importance of PPE.	CO2	BTL2	Understanding	
13.	Enlist the examples of PPE.	CO2	BTL1	Remembering	
14.	What are the duties of hazard control committee?	CO2	BTL2	Understanding	
15.	Enumerate the accident causation theories.	CO2	BTL1	Remembering	

16.	Short note about Domino theory.	CO2	BTL2	Understanding
17.	Express about Human factors theory.	CO2	BTL1	Remembering
18.	How accident investigation helpful in avoiding disaster?	CO2	BTL2	Understanding
19.	Differentiate accident reporting & accident investigation.	CO2	BTL1	Remembering
20.	Mention the need of accident analysis.	CO2	BTL2	Understanding
21.	State the term accident compensation.	CO2	BTL1	Remembering
22.	Contrast accident analysis & prevention.	CO2	BTL2	Understanding
23.	What is the role of orientation in hazard management?	CO2	BTL1	Remembering
24.	How education and training helpful in prevention of medical hazards?	CO2	BTL2	Understanding

PART-B

1.	Explain the key aspects of medical hazard control.	(16)	CO2	BTL3	Applying
2.	List the various kinds of biomedical system hazards, explain.	(16)	CO2	BTL4	Analyzing
3.	Describe about the responsibilities need to carry while handling of medical hazards.	(16)	CO2	BTL3	Applying
4.	How the medical hazards are analyzed to prevent disasters.	(16)	CO2	BTL4	Analyzing
5.	What are the corrective measures to be taken while identifying a medical hazard?	(16)	CO2	BTL3	Applying
6.	i. Define the term biological hazard. ii. Discuss in detail about biological hazards, how it be overcome?	(3) (13)	CO2 CO2	BTL4	Analyzing
7.	Classify the medical hazard with their appropriate code and write note about each.	(16)	CO2	BTL3	Applying
8.	Write note about Globally Harmonized System (GHS).	(16)	CO2	BTL4	Analyzing
9.	Discuss about health care waste disposal procedure.	(16)	CO2	BTL3	Applying
10.	i. Categorize the different types of PPE. ii. With appropriate example discuss about PPE.	(8) (8)	CO2 CO2	BTL4 BTL4	Analyzing Analyzing
11.	Elaborate the role of personal protective equipment in infection control.	(16)	CO2	BTL3	Applying
12.	Illustrate the function of hospital infection control committee in detail.	(16)	CO2	BTL4	Analyzing
13.	Outline about the following: i. Domino Theory. ii. Human Factors Theory.	(8) (8)	CO2 CO2	BTL3 BTL3	Applying Applying
14.	Draft note about the following: i. Systems Theory. ii. Swiss cheese Model.	(8) (8)	CO2 CO2	BTL4 BTL4	Analyzing Analyzing
15.	Sketch note about: i. Accident reporting ii. Accident Investigation iii. Accident Analysis	(6) (5) (5)	CO2 CO2 CO2	BTL3 BTL3 BTL3	Applying Applying Applying
16.	Show the steps need to follow accident prevention from accident analysis.	(16)	CO2	BTL4	Analyzing
17.	Summarize about workers orientation, education and training in medical hazard management.	(16)	CO2	BTL4	Analyzing

UNITIII - BIOMEDICAL WASTE MANAGEMENT

Biomedical Waste Management: Types of wastes, major and minor sources of biomedical waste, Categories and classification of biomedical waste, hazard of biomedical waste, need for disposal of biomedical waste, waste minimization, waste segregation and labeling, waste handling and disposal.

PART-A					
Q. No	Questions	CO	BT Level	Competence	
1.	Brief about biomedical waste management.	CO3	BTL1	Remembering	
2.	Mention the different categories of biomedical waste.	CO3	BTL2	Understanding	
3.	Give examples for infectious waste.	CO3	BTL1	Remembering	
4.	List the pathological type waste.	CO3	BTL2	Understanding	
5.	Mention the pharmaceutical waste.	CO3	BTL2	Understanding	
6.	Summarize the genotoxic waste.	CO3	BTL1	Remembering	
7.	Write about radioactive waste.	CO3	BTL1	Remembering	
8.	Brief the term chemical waste.	CO3	BTL2	Understanding	
9.	State the major sources of biomedical waste.	CO3	BTL1	Remembering	
10.	Enlist the minor sources of biomedical waste.	CO3	BTL2	Understanding	
11.	Enumerate the different classifications of biomedical waste.	CO3	BTL1	Remembering	
12.	Specify the hazards related to biomedical waste.	CO3	BTL2	Understanding	
13.	What is the need for disposal of biomedical waste?	CO3	BTL1	Remembering	
14.	How infectious wastes are disposed?	CO3	BTL2	Understanding	
15.	Short note about Incineration in biomedical waste management.	CO3	BTL1	Remembering	
16.	Point out pharmaceutical waste disposal procedures.	CO3	BTL2	Understanding	
17.	Enlist the steps taken to minimize the biomedical waste.	CO3	BTL1	Remembering	
18.	Write about waste segregation procedures.	CO3	BTL2	Understanding	
19.	Why labeling essential in medical waste management.	CO3	BTL1	Remembering	
20.	Draw any two medical labeling symbols.	CO3	BTL2	Understanding	
21.	Sketch radioactive waste symbol.	CO3	BTL1	Remembering	
22.	Classify the steps carried in waste handling.	CO3	BTL2	Understanding	
23.	How chemical waste disposed?	CO3	BTL1	Remembering	
24.	Express your view on autoclaving.	CO3	BTL2	Understanding	
PART-B					
1.	Summarize about biomedical waste management.	(16)	CO3	BTL3	Applying
2.	Classify the biomedical waste, explain about each.	(16)	CO3	BTL4	Analyzing
3.	Elaborate about major and minor sources of medical waste.	(16)	CO3	BTL3	Applying
4.	Categorize the biomedical waste and explain each in detail.	(16)	CO3	BTL4	Analyzing
5.	What are the labels used in handling biomedical waste? Explain each.	(16)	CO3	BTL4	Analyzing
6.	Write detailed note about the following: (i) Pathological waste. (ii) Chemical Waste. (iii) Genotoxic waste	(6) (5) (5)	CO3 CO3 CO3	BTL3 BTL3 BTL3	Applying Applying Applying
7.	Discuss in detail about hazards faced while handling medical waste.	(16)	CO3	BTL4	Analyzing
8.	Elaborate are the procedures carried to segregate different waste.	(16)	CO3	BTL3	Applying
9.	Sketch a note how different types of medical waste were disposed?	(16)	CO3	BTL4	Analyzing
10.	Express your views in reduction of medical waste and its management.	(16)	CO3	BTL3	Applying

11.	Specify the challenges faced during segregation and labeling process.	(16)	CO3	BTL4	Analyzing
12.	Illustrate the environmental and health impact on medical waste disposal.	(16)	CO3	BTL3	Applying
13.	i. Why medical wastes are need to dispose in proper manner? ii. What is the impact of medical waste in environment and health?	(3) (13)	CO3 CO3	BTL4 BTL4	Analyzing Analyzing
14.	How cross contamination avoided in medical waste management? Explain.	(16)	CO3	BTL3	Applying
15.	Elaborate about medical waste disposal procedures.	(16)	CO3	BTL4	Analyzing
16.	Discuss in detail about labeling of medical waste with suitable illustrations.	(16)	CO3	BTL3	Applying
17.	Show the procedures carried while handling different medical waste.	(16)	CO3	BTL4	Analyzing

UNITIV - FACILITY SAFETY					
Introduction, Facility Guidelines: Institute, Administrative Area Safety, Slip, Trip, and Fall Prevention, Safety Signs, Colors, and Marking Requirements, Tool Safety, Electrical Safety, Control of Hazardous Energy, Landscape and Ground Maintenance, Fleet and Vehicle Safety.					
PART- A					
Q. No	Questions	CO	BT Level	Competence	
1.	Brief the term facility safety.	CO4	BTL1	Remembering	
2.	What is the role of hospital administration in waste management?	CO4	BTL2	Understanding	
3.	Point out the hospital area safety.	CO4	BTL1	Remembering	
4.	How slip prevented?	CO4	BTL2	Understanding	
5.	Express your view on trips in hospital management.	CO4	BTL2	Understanding	
6.	Mention the steps carried to avoid fall prevention.	CO4	BTL1	Remembering	
7.	List the few safety signs in hospital management.	CO4	BTL1	Remembering	
8.	Enlist the standard colors used to for safety.	CO4	BTL2	Understanding	
9.	Summarize the various purposes of color marking in clinical environment.	CO4	BTL1	Remembering	
10.	Define the tem tools safety in hospital.	CO4	BTL2	Understanding	
11.	Specify about medical equipment safety.	CO4	BTL1	Remembering	
12.	State about non-medical tool safety.	CO4	BTL2	Understanding	
13.	Summarize about electrical safety.	CO4	BTL1	Remembering	
14.	What is Lockout Tagout?	CO4	BTL2	Understanding	
15.	Classify the hazardous energy.	CO4	BTL1	Remembering	
16.	Write down the chemical energy lockout / tagout procedure.	CO4	BTL2	Understanding	
17.	How electrical energy prevented from hazards?	CO4	BTL1	Remembering	
18.	Mention about chemical energy hazard control.	CO4	BTL2	Understanding	
19.	Identify the importance of hazardous energy control.	CO4	BTL1	Remembering	
20.	Correlate infrastructure enhancement and hazard avoidance in hospital.	CO4	BTL2	Understanding	
21.	What is a health care fleet?	CO4	BTL1	Remembering	
22.	Relate the terms optimized fleet carrier and life support.	CO4	BTL2	Understanding	
23.	Specify the special measures taken to ensure health care vehicle safety.	CO4	BTL1	Remembering	
24.	Summarize the social responsibilities in efficient health care transportation.	CO4	BTL2	Understanding	
PART- B					
1.	Elaborate about facility safety in medical waste management.	(16)	CO4	BTL3	Applying
2.	Explain the following in BMW: i. Policies and Procedures. ii. Resources and Infrastructure. iii. Proper Disposal.	(6) (5) (5)	CO4 CO4 CO4	BTL4 BTL4 BTL4	Analyzing Analyzing Analyzing

3.	Discuss the role of hospitals in medical waste management.	(16)	CO4	BTL3	Applying
4.	Write note on: i. Slip ii. Trip iii. Fall Prevention	(6) (5) (5)	CO4 CO4 CO4	BTL4 BTL4 BTL4	Analyzing Analyzing Analyzing
5.	Describe the various safety signs used in hospital administration with example.	(16)	CO4	BTL3	Applying
6.	Classify the color segregation used in hospital to ensure safety perception.	(16)	CO4	BTL4	Analyzing
7.	Write the purposes in detail with example about color marking in hospital.	(16)	CO4	BTL3	Applying
8.	Outline about the following: i. Medical equipment safety. ii. Non-medical tool safety. iii. General Safety.	(6) (5) (5)	CO4 CO4 CO4	BTL4 BTL4 BTL4	Analyzing Analyzing Analyzing
9.	Show the importance of electrical safety in hospitals.	(16)	CO4	BTL3	Applying
10.	Sketch that how hazardous energy controlled in clinical environment.	(16)	CO4	BTL4	Analyzing
11.	Illustrate the OSHA lockout tag out principle in detail.	(16)	CO4	BTL3	Applying
12.	Categorize the hazardous energy; write the appropriative corrective measure to avoid hazards.	(16)	CO4	BTL4	Analyzing
13.	How Electrical, Mechanical, Hydraulic and Pneumatic Energy hazards to be avoided?	(16)	CO4	BTL3	Applying
14.	Describe the mechanism of hazardous energy control program implemented on chemical, thermal and other energy sources.	(16)	CO4	BTL4	Analyzing
15.	Explain that landscape and ground maintenance role in hazard avoiding mechanism.	(16)	CO4	BTL3	Applying
16.	Write detailed note about fleet and vehicle safety in hospital management.	(16)	CO4	BTL4	Analyzing
17.	Outline the special considerations taken into developing hospital infrastructure to avoid hazards.	(16)	CO4	BTL3	Applying

UNITV - SAFETY ASPECTS IN HOSPITALS

Healthcare Immunizations, Centers for Disease Control and Prevention, Disinfectants, Sterilant, and Antiseptics, OSHA Blood borne Pathogens Standard, Tuberculosis, Healthcare Opportunistic Infections, Healthcare-Associated Infections, Medication Safety.

PART-A

Q.No	Questions	CO	BT Level	Competence
1.	Brief about safety aspects in hospital.	CO5	BTL1	Remembering
2.	What is the importance of immunization?	CO5	BTL2	Understanding
3.	Why is it called immunization?	CO5	BTL1	Remembering
4.	Specify the side effects of immunization.	CO5	BTL2	Understanding
5.	Mention the function of the centers for disease control.	CO5	BTL2	Understanding
6.	List the notable achievements of CDC.	CO5	BTL1	Remembering
7.	Summarize the ingredients of Disinfectants.	CO5	BTL1	Remembering
8.	Write short note about sanitization.	CO5	BTL2	Understanding
9.	Enlist the examples of sterliant.	CO5	BTL1	Remembering
10.	Point out about antiseptics.	CO5	BTL2	Understanding
11.	What are different stages of infection,	CO5	BTL1	Remembering
12.	State is the central focus of the OSHA blood borne pathogens standard?	CO5	BTL2	Understanding
13.	Write the different types of disinfections.	CO5	BTL1	Remembering
14.	Identify the importance of Hydrogen peroxide in chemical disinfection.	CO5	BTL2	Understanding

15.	Define fomite with example.	CO5	BTL1	Remembering
16.	Enumerate the Tuberculosis symptoms.	CO5	BTL2	Understanding
17.	How TB spreads?	CO5	BTL1	Remembering
18.	Brief about Opportunistic infections.	CO5	BTL2	Understanding
19.	Define nosocomial infection.	CO5	BTL1	Remembering
20.	Give examples of Healthcare-associated infections.	CO5	BTL2	Understanding
21.	Classify opportunistic infections.	CO5	BTL1	Remembering
22.	What are the three name categories for a medication?	CO5	BTL2	Understanding
23.	Why medication safety is essential?	CO5	BTL1	Remembering
24.	Categorize the four stages of medication?	CO5	BTL2	Understanding

PART- B					
1.	What are the safety aspects to be taken in hospitals? Explain in details.	(16)	CO5	BTL3	Applying
2.	Elaborate about Immunization program with recent examples.	(16)	CO5	BTL4	Analyzing
3.	Classify the different types of immunization with suitable examples.	(16)	CO5	BTL3	Applying
4.	Specify the roles and responsibilities of Centers for Disease Control and Prevention	(16)	CO5	BTL4	Analyzing
5.	Outline about various disinfectants used in hospital. Explain about each.	(16)	CO5	BTL3	Applying
6.	Contrast cleaning, sanitizing and disinfecting	(16)	CO5	BTL4	Analyzing
7.	Outline the following: i. Antiseptic. ii. Disinfectant. iii. Sterilant.	(6) (5) (5)	CO5	BTL3	Applying
8.	Discuss in detail about OSHA blood borne pathogens standard.	(16)	CO5	BTL4	Analyzing
9.	Describe in detail about infection chain,	(16)	CO5	BTL3	Applying
10.	Show that how fomites management minimizes disease spread?	(16)	CO5	BTL4	Analyzing
11.	Illustrate the cause, effects and treatment of Tuberculosis in detail.	(16)	CO5	BTL3	Applying
12.	Sketch note about Opportunistic Infections.	(16)	CO5	BTL4	Analyzing
13.	Analyze about nosocomial infections.	(16)	CO5	BTL3	Applying
14.	How Healthcare-associated infections (HAIs) prevented? Elaborate?	(16)	CO5	BTL4	Analyzing
15.	Contrast Opportunistic Infections and nosocomial infections with their categories.	(16)	CO5	BTL3	Applying
16.	Elaborate medication safety procedures in detail.	(16)	CO5	BTL4	Analyzing
17.	Specify about medication rights in detail.	(16)	CO5	BTL3	Applying