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Code No: 156AX

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech III Year II Semester Examinations, January/February - 2025

ENVIRONMENTAL ENGINEERING

(Civil Engineering)

Time: 3 Hours **Max. Marks: 75**

Note: i) Question paper consists of Part A, Part B.
ii) Part A is compulsory, which carries 25 marks. In Part A, Answer all questions.
iii) In Part B, Answer any one question from each unit. Each question carries 10 marks and may have a, b as sub questions.

PART – A

(25 Marks)

1.a)	What are the drinking water standards as per WHO?	[2]
b)	Describe infiltration galleries and their role in water supply systems.	[3]
c)	What is the role of coagulants in water treatment?	[2]
d)	Define the term "chlorine demand" and its significance in disinfection.	[3]
e)	Differentiate between stormwater and sewage.	[2]
f)	What are the sanitary fittings commonly used in house drainage systems?	[3]
g)	Explain the purpose of a skimming tank in a wastewater treatment plant.	[2]
h)	What are the factors affecting sludge digestion in treatment plants?	[3]
i)	Classify air pollutants and give examples of each type.	[2]
j)	Explain the global effects of air pollution, such as ozone depletion.	[3]

PART – B

(50 Marks)

2.a)	Discuss the various types of water demand and the factors affecting them.	
b)	Explain the significance of design period in planning a water supply system.	[5+5]
	OR	
3.a)	Describe the types of intakes used in water supply systems.	
b)	Explain the factors considered when selecting a water source.	[5+5]
4.a)	Explain the design considerations for rapid gravity filters.	
b)	Discuss common operational troubles faced during filtration.	[5+5]
	OR	
5.a)	Compare the working principles of slow and rapid gravity filters.	
b)	Describe the importance of chlorination in water treatment.	[5+5]
6.a)	Explain the role of traps in plumbing systems.	
b)	Differentiate between one-pipe and two-pipe plumbing systems.	[5+5]
	OR	
7.a)	Describe the process of designing a sewer.	
b)	List the materials commonly used for sewer construction and their properties.	[5+5]

8.a) Discuss the working principles and design of septic tanks.
b) Explain the role of soak pits in wastewater disposal. [5+5]

OR

9.a) Describe the construction and working principles of trickling filters.
b) Discuss the design and operation of digestion tanks. [5+5]

10.a) Discuss the meteorological parameters affecting air pollution.
b) Explain the different types of air pollution control devices. [5+5]

OR

11.a) Describe the working of cyclone separators in controlling particulate pollutants.
b) Explain the role of gravity settlers in air pollution control. [5+5]

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