Code: 20A01404T

R20

B.Tech II Year II Semester (R20) Regular & Supplementary Examinations August/September 2023

ENVIRONMENTAL ENGINEERING - I

(Civil Engineering)

Time: 3 hours Max. Marks: 70

PART – A

(Compulsory Question)

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1		Answer the following: (10 X 02 = 20 Marks)	
	(a)	What is the significance of water quality in environmental engineering?	2M
	(b)	Explain the concept of adsorption in advanced water treatment.	2M
	(c)	What are the major components of a sewer system?	2M
	(d)	What is the purpose of anaerobic digestion in wastewater treatment?	2M
	(e)	Define the term "source control" and explain its role in air pollution control.	2M
	(f)	What are the common challenges associated with air pollution control and management, and how can they be addressed?	2M
	(g)	Define municipal solid waste and explain its composition.	2M
	(h)	Explain the concept of landfill and how it is used for solid waste disposal.	2M
	(i)	Discuss the role of water pumps in home plumbing systems.	2M
	(j)	Explain the importance of proper building drainage in high rise buildings.	2M

PART – B

(Answer all the questions: 05 X 10 = 50 Marks)

2		Discuss the different sources of water, including surface water, groundwater, and rainwater. What are the advantages and disadvantages of each source in terms of availability, quality, and treatment requirements?	10M
		OR	
3		Discuss the different methods used for disinfecting water in water treatment plants with the advantages and disadvantages of each method.	10M
4		Analyze the factors that influence the quantity of sewage generated in urban and rural areas. What are some common sources of domestic sewage and how do they vary between different regions and populations?	10M
		OR	
5		Analyze the impact of improper disposal of sewage on water quality and the environment. What are some common pollutants associated with improper sewage disposal and what are their effects on aquatic life?	10M
6		Describe the composition of air and the role of each component. What is the most abundant gas in the atmosphere and how does it support life on Earth?	10M
		OR	
7		Explain the role of regulations in controlling air pollution. What are some common regulatory measures implemented by governments to reduce air pollution and how effective are they?	10M

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8	Describe the physical and chemical characteristics of municipal solid waste and how they affect the environment. What are some common pollutants found in waste and how do they impact soil and water quality?	10M
	OR	
9	Analyze the environmental impacts of solid waste disposal and its effect on human health. What are the major sources of waste pollution and how do they impact soil, water, and air quality?	10M
10	Analyze the different materials used for plumbing pipes in home plumbing systems, their respective properties, and their suitability for different applications. What factors should be considered when selecting plumbing materials?	10M
	OR	
11	Discuss the impact of high-rise building height on the performance of building drainage systems. How do taller buildings affect the design, installation, and maintenance of these systems?	10M

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Code: 20A01404T

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B.Tech II Year II Semester (R20) Regular & Supplementary Examinations April/May 2024

ENVIRONMENTAL ENGINEERING - I

(Civil Engineering)

Time: 3 hours Max. Marks: 70

PART – A

(Compulsory Question)

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1		Answer the following: (10 X 02 = 20 Marks)	
	(a)	State the various sources of water.	2M
	(b)	Why disinfection has to be carried out for the water?	2M
	(c)	Quote few of the sewage appurtenances.	2M
	(d)	Differentiate between COD (Chemical Oxygen Demand) and BOD (Biochemical Oxygen Demand).	2M
	(e)	How the air pollutants can be monitored?	2M
	(f)	Quality of fuel influences the air pollution. Justify.	2M
	(g)	Recall any four municipal solid wastes.	2M
	(h)	What is meant by incineration?	2M
	(i)	Distinguish break pressure tanks from storage tanks.	2M
	(j)	Mention the various kinds of fittings.	2M

PART – B

(Answer all the questions: 05 X 10 = 50 Marks)

2	(a)	Discuss about the water quality standards and the need for the water safety plans.	7M
	(b)	Brief a note on domestic water demand and commercial & industrial water demand.	3M
		OR	
3		Write a detailed note on the following: (i) Aeration, (ii) Coagulation, (iii) Flocculation.	10M
4	(a)	Describe about the operation and maintenance of sewers.	7M
	(b)	Give a note on sewage pumping.	3M
		OR	
5		Elaborate the working of aerobic and anaerobic treatment systems.	10M
6	(a)	Table the properties and composition of air.	3M
	(b)	Explain the process of quantification of air pollutants.	7M
		OR	
7	(a)	Discuss about the various control measures for air pollution.	7M
	(b)	Write a note on air quality standards.	3M
8		Brief about the following classification of municipal solid wastes: (i) Garbage and rubbish wastes, (ii) Ashes and residues, (iii) Biodegradable wastes & Sewage wastes.	10M
		OR	
9		Explain the process of disposing the landfills by land filling, recycling and composting.	10M
10		Describe about the various types of home plumbing systems for water supply.	10M
		OR	
11		Discuss about the role of government authorities in water supply.	10M

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