QP Code: RM23MTECH145 | Reg. No | | | | | | | | | | | AY 23

GIET UNIVERSITY, GUNUPUR – 765022

M. Tech (Second Semester) Examinations, May – 2024

MPCCH2054 – Waste Water Engineering

(Chemical)

Time: 3Hrs | Maximum: 70 Marks

(The figures in the right hand margin indicate marks.)

PART – A **(2 x 10 = 20 Marks)**

Q.1. Answer all questions	CO#	Blooms Level
a. Explain how the sludge is disposed.	CO2	K1
b. Contrast lagoon system and its importance.	CO2	K1
c. Illustrate anaerobic pond.	CO2	K1
d. Articulate the pre-chlorination in water treatment process.	CO1	K2
e. Write about the physical characteristic of water.	CO1	K2
f. Categorize the objective of advanced treatment process.	CO1	K2
g. What are different types of hardness?	CO3	K2
h. Suggest about treated water utilization.	CO3	K2
i. Prioritize the materials used for membrane design.	CO3	K3
j. Plot the chlorine demand curve.	CO4	K4

PART – B **(10 x 5=50 Marks)**

Answer ***ANY FIVE*** questions	Marks	CO#	Blooms Level
2. a. Describe about wet air oxidation method.	5	CO2	K3
b. Discuss in details about toxic material removal from waste water.	5	CO2	K3
3.a. How the organic compounds from waste water are removed? Explain in details.	5	CO3	K4
b. How the ion-exchange process is used for waste water treatment?	5	CO3	K4
4. a. Name and explain the essential objectives of sludge stabilisation.	5	CO1	K4
b. The digestion process in a digester of a municipal wastewater treatment plant basically runs in four phases. Name the four phases of this conversion in the correct sequence.	5	CO1	K4
5.a. Digester gas is an essential source of energy in wastewater treatment plants. What possibilities are there for utilising the digester gas?	5	CO2	K4
b. What type of removal of the sewage sludge to agricultural areas is, in general, the most economic disposal? (i) Wet transport after thickening. (ii) Removal of sludge from the sludge basins. (iii) Scattering of dried sludge. (iv) Composting. (v) Removal of dewatered sludge from chamber filter presses.	5	CO2	K3

6. a.	Enumerate the Toxicity Assessment of Industrial Effluent by Bioassays.	5	CO4	K3
b.	Explain the different steps used to control the water pollution in source.	5	CO4	K3
7.a.	Write the different methods used for heavy metal removal.	5	CO3	K3
b.	Explain details about equalization process.	5	CO3	K4
8. a.	What is the advanced treatment process used for waste water treatment?	5	CO4	K4
b.	Explain in details about rotating biological contactor.	5	CO4	K3

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