QP Code: RN22BTECH275 | Reg. No | | | | | | | | | | | AR 22

Gandhi Institute of Engineering and Technology University, Odisha, Gunupur
(GIET University)

B. Tech (Fifth Semester - Regular) Examinations, November – 2024

22BCVPE65001 – Industrial Waste Water Management

(Civil Engineering)

Time: 3 hrs | Maximum: 70 Marks

Answer ALL questions

(The figures in the right hand margin indicate marks)

PART – A **(2 x 5 = 10 Marks)**

Q.1. Answer ***ALL*** questions	CO #	Blooms Level
a. Define BOD & COD.	CO1	K1
b. Draw the diagram of activated sludge process.	CO2	K1
c. Mention the causes of oil in stream	CO3	K1
d. Write down the wastes generated from Oil refinery industry.	CO4	K1
e. Define equalization .	CO4	K1

PART – B **(15 x 4 = 60 Marks)**

Answer ***All*** the questions	Marks	CO #	Blooms Level
2. a. Explain the process of coagulation.	7	CO1	K2
b. Explain any three methods of primary treatment.	8	CO1	K2
(OR)			
c. Describe cycle of waste water briefly &with neat sketch.	10	CO1	K2
d. Explain any 5 coagulants with their chemical reactions.	5	CO1	K2
3.a. Explain types of trickling filters.	7	CO2	K2
b. Explain activated sludge process with neat sketch	8	CO2	K2
(OR)			
c. Define secondary treatment. Explain any two procedure of secondary treatment in detail.	10	CO2	K2
d. Explain reverse osmosis.	5	CO2	K2
4.a. How the waste water are generated from the Paper industry and list the characteristics of it.	10	CO3	K2
b. Discuss about the wastes generated from Textile industry.	5	CO3	K2
(OR)			
c. Explain the treatment process of wastes from Distillery industry.	10	CO3	K2
d. Describe about the waste management in Dairy industry.	5	CO3	K2
5.a. Explain about waste minimization in details.	8	CO4	K2
b. Discuss the procedure of neutralization.	7	CO4	K2
(OR)			
c. Design the Sedimentation tank of a water work to the treat 12x 10^6lit./day detention period is 11 hrs flow in the Sedimentation tank is 20 cm/min. Assume all the necessary data.	10	CO4	K4
d. Explain the Processes of heavy metal Removal.	5	CO4	K2

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