R13

Code No: 117DW

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech IV Year I Semester Examinations, April/May - 2018

INDUSTRIAL WASTE WATER TREATMENT

(Civil Engineering)

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

Note: This question paper contains two parts A and B.
Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART-A **(25 Marks)**

1.a)	What are the biological properties causing pollution in industrial waste?	[2]
b)	What are the effects of sewers in natural waters bodies?	[3]
c)	What are the primary treatment methods?	[2]
d)	How waste reduction and volume reduction is done for waste water treatment?	[3]
e)	How effective is nitrification process as compared to de-nitrification process?	[2]
f)	Write about the disposal of treated waste water.	[3]
g)	Write the characteristics for the food processing industries.	[2]
h)	Write the composition for petroleum refineries.	[3]
i)	Write a short note on atomic energy plants.	[2]
j)	What are the characteristics of mineral processing industries?	[3]

PART-B **(50 Marks)**

2.a)	What are the chemical properties causing pollution in industrial waste? Write a note.	
b)	What are the effects of industrial effluents on water bodies? Discuss.	[5+5]
	OR	
3.a)	How the organic properties cause industrial pollution? Discuss.	
b)	Explain about sources of industrial and municipal waste water.	[5+5]
4.a)	Write the step by step process in primary treatment of waste water.	
b)	How oil separation by flotation method is done for waste water treatment?	[5+5]
	OR	
5.	How waste reduction and volume reduction is used in primary treatment for waste water.	[10]
6.	Explain the method for the phosphorous removal from industrial waste.	[10]
	OR	
7.	Write short notes on the membrane separation process method in treating industrial wastes.	[10]

8. Explain in detail the different types of methods for treatment of petroleum refineries waste. [10]

OR

9. Briefly describe the composition and the treatment for food processing industrial wastes. [10]

10.a) Explain the composition and characteristics of tanning industries.
b) Write about the treatment method for tanning industries. [5+5]

OR

11.a) Explain about the operation and maintenance problems for common effluent treatment plants (CETP).
b) Explain the treatment process for mineral processing industries. [5+5]

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