INSTITUTE OF AERONAUTICAL ENGINEERING

(Autonomous)

Dundigal, Hyderabad - 500 043

CIVIL ENGINEERING

ASSIGNMENT QUESTIONS

Course Name	:	INDUSTRIAL WASTE WATER TREATMENT
Course Code	:	A70139-R15
Class	:	IV B.TECH I SEM
Branch	:	CIVIL ENGINEERING
Year	:	2018 – 2019
Course Coordinator	:	Mr. Ch. Balakrishna, Assistant Professor, Dept of CE
Course Faculty	:	Dr. J.S.R Prasad, Mr. Ch. Balakrishna, Assistant Professor, Dept of CE

OBJECTIVE:

To meet the challenge of ensuring excellence in engineering education, the issue of quality needs to be addressed, debated and taken forward in a systematic manner. Accreditation is the principal means of quality assurance in higher education. The major emphasis of accreditation process is to measure the outcomes of the program that is being accredited. In line with this, Faculty of Institute of Aeronautical Engineering, Hyderabad has taken a lead in incorporating philosophy of outcome based education in the process of problem solving and career development. So, all students of the institute should understand the depth and approach of course to be taught through this question bank, which will enhance learner's learning process.

S. No	Question	Blooms Taxonomy Level	Course Outcome
	UNIT-I		
1	Define the terms a). Wastewater b). Wastewater treatment c).Effluent d) Influent	Remember	1
2	Write the i). physical ii). Chemical iii) Biological iv). Organic properties of Industrial Waste Water.	Understand	1
3	Differentiate between Municipal and Industrial wastewater?	Understand	2
4	Explain in detail the effects of Industrial effluents on sewer and Natural water bodies.	Understand	2
5	Describe the following characteristics of waste water in detail of the following 1. pH, 2. Solids, 3. BOD, 4. COD, 5. Heavy Metals	Remember	3
6	Explain briefly the methods of removal of suspended solids from industrial waste Water.	Remember	4
7	Define Industrial waste water and explain. How it is different from Domestic sewage?	Understand	4
8	Write short notes on 1). BOD 2). COD 3). TOC 4). ThOD	Remember	3
9	What factors the selection of particular process for treating the effluent of Industrial Waste Water. Write three alternatives for the disposal of the industrial wastes?	Understand	2
10	How are the characteristics of industrial waste water expressed? What is the importance of dissolved oxygen which is present in water? How does it help for the treatment of waste water? How the dissolved oxygen level is maintained in the stream?	Remember	3
	UNIT-II		
1	Explain about pre and Primary Treatment of Industrial Wastewater .	Understand	3
2	Explain the necessity of equalization and proportioning for industrial waste water Treatment.	Understand	4
3	Enumerate the basic theories of Industrial wastewater management and Explain the strength reduction.	Understand	4
4	What is volume reduction? List and explain any four methods of the volume. reduction in industrial wastewater?	Remember	4
5	What is the necessity of Neutralization in Industrial waste treatment? Explain the working of the same with suitable examples?	Understand	3

S. No	Question	Blooms Taxonomy Level	Course Outcome
6	Explain the process of Oil Separation by floatation method.	Understand	3
7	Draw the sketches of following and explain the mechanism of the treatment 1).Stabilization ponds, 2).Oxidation ditch	Remember	4
8	How Oils and grease removal are removed in Industrial in Industrial effluent?	Understand	4
9	How biodegradable organic material are removed from Industrial effluent?	Remember	3
10	Explain the process of waste reduction with suitable examples.	Understand	4

UNIT-III

S. No	Question	Blooms Taxonomy Level	Course Outcome
1	Write an essay on heavy metal poisoning and their prevention with a suitable example	Understand	5
2	Express the need for the effluent standards and stream standards in waste water Treatment.	Remember	5
3	Write a short notes on disposal of industrial wastewater after the treatment.	Remember	6
4	What do you understand by equalization, neutralization and proportioning? Give examples from industry?	Understand	6
5	Why are solvents, grease, cyanide, phenol and sulphates considered undesirable for discharge into public sewers?	Remember	6
6	Explain briefly the nitrogen removal by biological nitrification and de-nitrification.	Understand	6
7	Enlist & Explain the Factors Affecting Adsorption.	Understand	6
8	Explain the Applications of membrane Technologies in Wastewater treatment.	Remember	6
9	List various effects of discharging raw industrial waste to the streams. Briefly explain any four.	Remember	6
10	Explain briefly the process of removal of phosphorous in industrial waste water Treatment.	Understand	6

UNIT-IV

S. No	Question	Blooms Taxonomy Level	Course Outcome
1	Characterize the various treatment processes for food and beverage industry waste water. What are the prospects of waste utilization from food industry?	Remember	7
2	Describe the impacts of petroleum exploration and its production on the environment.	Remember	7
3	Describe in detail some methods for controlling the pollution from food and beverage Industries.	Remember	7
4	a. Between BOD and COD, which one usually assumes higher value for a food plant? Justify your answer. b. Name two food plants having high value of BOD mentioning the approx. range of the values. What is the prescribed safe disposal limit of BOD?	Remember	7
5	Discuss the characteristics of petrochemical Industrial wastewater.	Understand	7
6	Discuss the characteristics of Sugar mill waste water.	Remember	7
7	What are the various polluting effluents generated by integrated steel plants?	Understand	7
8	Give the characteristics and treatment of the wastes from sugar industry.	Remember	7
9	Draw a neat sketch of the process of Sugar Industry and give the different resources.	Understand	7
10	Give the values of different characteristics of Food Processing Industrial waste and write the different characteristics of the same?	Understand	7

UNIT-V

S. No	Question	Blooms Taxonomy Level	Course Outcome
1	Draw the neat process flow sheet, highlight the origin and characterization of wastewater generated in typical tannery industry.	Understand	9
2	Draw the neat process flow sheet, highlight the origin and characterization of wastewater generated in textile industry.	Understand	9
3	Explain the design procedure of Common Effluent Treatment Plants (CEPT).	Understand	9
4	Explain the advantaged and limitations of combined treatment of industrial waste and municipal waste water.	Remember	9
5	What are the sources of various pollution in an integrated cotton Textile mill? Give a plan for the control of this pollution.	Remember	9
6	What are the advantages of combined treatment of industrial waste water with domestic waste water?	Understand	9
7	Explain the Neat flow diagram a working of a CEPT. What are the situations in which it is used.	Remember	8

S. No	Question	Blooms Taxonomy Level	Course Outcome
8	Describe the characteristics of Atomic Energy plants effluents.	Understand	8
9	Describe the characteristics of Mineral processing Industrial effluents.	Understand	8
10	Explain the process involved in Joint treatment of Raw Industrial wastewater and Domestic Sewage.	Understand	8

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