

Reg.No. _____

**Karunya UNIVERSITY**

(Karunya Institute of Technology & Sciences)

(Declared as Deemed-to-be University under Sec.3 of the UGC Act, 1956)

End Semester Examination – Nov/Dec – 2016

Code : 14CE2038 **Semester** : V11
Sub. Name : INDUSTRIAL WASTE TREATMENT AND DISPOSAL **Duration** : 3hrs
Max. marks : 100

ANSWER ALL QUESTIONS (5 x 20 = 100 Marks)

Q. No.	Sub Div.	Questions	Course Outcome	Marks
1.	a.	Explain the process of aerobic decomposition of organic matter.	CO1	10
	b.	Explain briefly about chemical precipitation.	CO2	10
(OR)				
2.	a.	Narrate the pollution caused by tannery waste water and explain how it can be controlled?	CO3	10
	b.	Discuss on the factors affected by pharmaceutical waste and suggest remedies to overcome the effluent containing the large amount of antibiotics.	CO3	10
3.	a.	Discuss on the optimized design of wastewater treatment systems for application in the petro chemical industry.	CO3	10
	b.	Characterize the various treatment processes for food and beverage industry wastewater. What are the prospects of waste utilization from food industry?	CO3	10
(OR)				
4.	a.	Write a short note on 1. Separation of solids 2. Water reuse and recycling practices in industry 3. Sanitary landfilling	CO1	10
	b.	Write briefly the efficient standards adopted for industrial wastes in our country.	CO3	10
5.	a.	What is the role of chemical oxidation in industrial wastewater treatment?	CO2	8
	b.	Describe in detail the various steps involved in wastewater purification system.	CO2	8
	c.	Name any two physical unit processes in wastewater treatment plant.	CO2	2
	d.	List out the methods available for separation of solids.	CO2	2
(OR)				
6.	a.	Explain how thermal power plant pollutes air and water. State also the effects of such pollution.	CO2	10
	b.	Write a brief note on Environmental Legislations.	CO3	10
7.	a.	Write a note on cleaner technology.	CO3	10
	b.	Explain equalization and neutralization of industrial wastewater.	CO1	10
(OR)				
8.	a.	What is a stabilization pond? Explain the three types of stabilization pond in detail.	CO1	8
	b.	Explain the process of anaerobic decomposition of organic matter.	CO1	8

	c.	Write a short note on types of filters.	CO1	2
	d.	What do you mean by flocculation?	CO2	2
		<u>Compulsory:</u>		
9.	a.	Characterize the various treatment processes for food and beverage.	CO2	8
	b.	Write in detail on removal of solids and dissolved solids from Distillery Industrial wastewater.	CO2	8
	c.	What are the major pollutants in tannery wastewater?	CO2	2
	d.	What is meant by advanced oxidation of a pulp mill bleaching wastewater?	CO2	2

ALL THE BEST