

Time: 2 hours 30 minutes

Max. Marks: 80

1T00536 - T.E.(Chemical Engineering)(SEM-VI)(Choice Base Credit Grading System) (R-2020-21) ('C' Scheme) / 89243 -

Pollution Control Technology

DATE: 24/5/2022

QP CODE: 93488

Q1.	Choose the correct option for following questions. All the Questions are compulsory and carry equal marks
1.	In which unit sound is measured?
Option A:	Kilowatt
Option B:	Decimetre
Option C:	Kilogram
Option D:	Decibel
2.	Determine ultimate BOD for a wastewater having 5 day BOD at 20 °C as 160 mg/l. Assume reaction rate constant as 0.2per day (base e).
Option A:	235 mg/l
Option B:	253 mg/l
Option C:	177 mg/l
Option D:	153 mg/l
3.	The effective height of stack is given by _____
Option A:	plume height plus actual height of the stack
Option B:	plume height multiply by actual height of the stack
Option C:	plume height minus actual height of the stack
Option D:	actual height of the stack minus Plume height
4.	What does zero discharge actually refers to
Option A:	There is zero discharge for ions
Option B:	The reject is recycled from every part of the treatment plant
Option C:	The reject is not rejected out
Option D:	100 percent efficient plant
5.	Which of the following air pollution control device has maximum efficiency?
Option A:	Electrostatic precipitator
Option B:	Venturi Scrubber
Option C:	Spray tower
Option D:	Wet cyclonic scrubber
6.	The function of automobile catalytic converter is to control emissions of
Option A:	carbon dioxide and hydrogen
Option B:	carbon monoxide and nitrogen dioxide
Option C:	carbon monoxide and Carbon dioxide
Option D:	carbon monoxide and hydrogen
7.	A(n) _____ is specially designed to safely hold municipal solid waste, construction debris, and some types of agricultural and industrial waste
Option A:	Waste pit
Option B:	Open dumphing
Option C:	Sanitary Landfill
Option D:	dumpster

8.	How long does methane stay in a landfill?
Option A:	1 to 3 years or less
Option B:	4 to 10 years
Option C:	10 to 15 years
Option D:	20 to 50 years or longer
9.	The best method to disposal of refuse to insure complete destruction of pathogenic bacteria is by
Option A:	land disposal
Option B:	pulverization
Option C:	incineration
Option D:	composting
10.	Which of the below is not an idea behind solid waste management?
Option A:	Stop waste generation
Option B:	Storage and collection
Option C:	Disposal
Option D:	Control of waste generation

Q2	Solve any Four out of Six	5 marks each
A	Write a short notes on noise pollution	
B	What is carbonaceous and nitrification demand in BOD?	
C	Explain the effects of the Ozone layer depletion and Oxides of sulfur on environment	
D	Write short notes on classification of solid waste	
E	What are the limitations to Gaussian Plume Model	
F	Short notes on Eutrophication in lakes and river	

Q3.	Solve any Two Questions out of Three	10 marks each
A	<p>A completely mixed activated sludge process is to be used to treat the waste-water flow rate 500 m³/h having as soluble BOD₅ of 250 mg/l. The concentration of soluble BOD₅ escaping treatment is 10 mg/L. Design criteria are as follows Y=0.5, k=5 Day⁻¹, K_d=0.061 day⁻¹, K_s=100 mg/l and MLVSS (X)=2000 mg/L. Calculate</p> <ol style="list-style-type: none"> Mean cell residence time (θ_c) Hydraulic retention time (θ) Volume of aeration tank The volume of the aeration tank The treatment efficiency 	
B	How is air pollutants classified? List the major types of Air pollutants. Briefly explain the dry deposition mechanism and wet precipitation mechanism of nature for removal of particulate matter	
C	What are the various treatments for hazardous waste management? Describe any two in detail	

Q4.	Solve any Two Questions out of Three	10 marks each
A	What is the importance of environmental pollution control? Describe in details the environmental legislation and regulations in India	
B	Describe operational and constructional features of the flame photometer analyzer to measure stack gases concentration release from industry	
C	What is DO Sag-Curve? Explain in brief	