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Question Paper Code	11490

B.E. / B.Tech. - DEGREE EXAMINATIONS, NOV/DEC 2022

Sixth Semester

Civil Engineering

CE8005 - AIR POLLUTION AND CONTROL ENGINEERING

(Regulations 2017)

Duration: 3 Hours Max. Marks: 100

PART - A (10 × 2 = 20 Marks)

Answer ALL Questions

		Marks, K-Level, CO
1.	Recall the importance of grab samples in air pollution.	2,K1,CO1
2.	What do you understand by air quality standards?	2,K1,CO1
3.	Define atmospheric stability.	2,K1,CO3
4.	What are the applications of dispersion model?	2,K1,CO3
5.	State the particle size which can be removed in a ESP and Fabric filter.	2,K1,CO4
6.	Name the common methods of filter cleaning.	2,K1,CO4
7.	Differentiate adsorption and absorption.	2,K2,CO5
8.	List the mechanisms available for controlling gaseous pollutants.	2,K1,CO5
9.	State the causes of sick building syndrome.	2,K1,CO6
10.	Write the ambient noise level for residential and industrial zone.	2,K1,CO6

PART - B (5 × 13 = 65 Marks)

Answer ALL Questions

11.	a)	(i) Classify air pollution with suitable examples. (ii) Explain with neat sketch about the structures of atmosphere.	6,K2,CO1 7,K2,CO1
		OR	
	b)	Name the elemental composition of atmosphere and discuss briefly about ambient air quality standards adopted by EPA.	13,K2,CO1
12.	a)	A factory emits 40 g/s of NO_x at an effective height H of 75 m. The wind speed is 5 m/s. At a distance of 1.5 km downwind the standard deviation values of y and z are 35 m and 22 m respectively. What are the NO_x Concentrations (i) At the center line of the plume (ii) At a point 75 m to the side of and 10 m below the center line.	13,K3,CO3
		OR	

b) Elaborate about the various meteorological parameters that influencing air pollution. *13,K3,CO3*

13. a) Explain with neat sketch about fabric filter with advantages, disadvantages and applications. *13,K3,CO4*

OR

b) A cylindrical electrostatic precipitator of diameter 0.3m is used for separating pulverized coal fly ash particles from a furnace gas stream. If the volumetric flow rate of the gas is 0.05 m^3/sec, what will be the length of precipitator for obtaining a collection efficiency of 99.9%? What percent change in electrode collection area is required to increase the collection efficiency from 99.9 to 99.95%? *13,K3,CO4*

14. a) Briefly discuss on types of carbon adsorption system with suitable neat sketch. *13,K2,CO5*

OR

b) (i) Write the working and design aspects of bio filters. *7,K2,CO5*

(ii) How do combustion process is applied in gaseous pollution control? *6,K2,CO5*

15. a) Define Indoor Air Quality. What are the sources and types of Indoor air Pollutants? How will you control it? *13,K2,CO6*

OR

b) Explain the impact of noise pollution on humans and how it can be controlled at source? *13,K2,CO6*

PART - C (1 × 15 = 15 Marks)

16. a) What are the effects of air pollution on human being, animals and plants? *15,K2,CO2*

OR

b) How air pollutant produces economic effects? Explain in detail. *15,K2,CO2*