A **Reg. No. :** | | | | | | | | | | |

Question Paper Code: 59111

B.E. / B.Tech. DEGREE EXAMINATION, APRIL 2019

Elective

Civil Engineering

15UCE911- AIR POLLUTION MANAGEMENT

(Regulation 2015)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. Which of the following is a liquid form of aerosol? CO1- R

   (a) Fume (b) Dust (c) Mist (d) Smoke

2. The minimum size of smoke particle is CO1- R

   (a) 0.2µm (b)1µm (c) 0.8µm (d) 0.5µm

3. The permissible concentration of PM 10 in the air is CO2- R

   (a) 60µg/m3 (b) 40µg/m3 (c) 50µg/m3 (d) 20µg/m3

4. Which of the following air pollution control device has maximum efficiency? CO2- R

   (a) Electrostatic precipitator (b) Dynamic precipitator

   (c) Spray tower (d) Wet cyclonic scrubber

5. Identify the correct statement regarding Electrostatic precipitator. CO3- R

   (a) Minimum particle size removal is <0.5µm

   (b) They can be operated at high temperature

   (c) It has low maintenance cost

   (d) It does not cause any freezing problem

6. When environmental Lapse Rate (ELR) is less is than Adiabatic Lapse Rate (ALR), then which of the following occurs? CO3- R

(a) Sub adiabatic lapse rate (b) Super adiabatic lapse rate

(c) Neutral lapse rate (d) Adiabatic lapse rate

7. Which of the following catalyst is used for removing hydrocarbon from gaseous pollutant in combustion unit? CO4- R

(a) Platinum (b) Activated alumina

(c)Vanadium (d) Potassium permanganate

8. Which of the following is the absorption unit? CO4- R

(a) Cyclone collector (b) Plate tower

(c) Gravitation settling chamber (d) Dynamic precipitator

9. Non-Dispersive Ultraviolet (NDUV) analysers are primarily used to detect which of the following two gases? CO5- R

(a) Oxygen and Carbon Dioxide (b) Oxygen and Nitrogen Dioxide

(c) Nitrogen Dioxide and Sulphur Dioxide (d) Sulphur Dioxide and Oxygen

10. Fluorescence analysers are used to analyse which of the following gases? CO5- R

(a) Nitrogen dioxide (b) Sulphur dioxide (c) Sulphur trioxide (d) Nitrous oxide

PART – B (5 x 2= 10 Marks)

11. What are the objectives of air sampling? CO1- R

12. Explain Gaussian dispersion model. CO2- R

13. What is meant by pollution control by fugitive emission containment? CO3- R

14. Define the term air quality index. CO4- R

15. What are the factors influencing the intensity of traffic noise? CO5- R

PART – C (5 x 16= 80 Marks)

16. (a) What are the devices used for sampling gases and vapours? Describe any two in detail. CO1-U (16)

Or

(b) (i) Write the ambient air quality standards as per CPCB? CO1-U (8)

(ii) What is isokinetic sampling? What all are the conditions for isokinetic sampling? CO1-U (8)

17.	(a)	What is dispersion model? Explain its various types.	CO2-U	(16)
		Or		
	(b)	Explain in detail about different types of plumerise patterns.	CO2-U	(16)
18.	(a)	What are scrubbing devices in pollution control? Explain with a neat sketch.	CO3-U	(16)
		Or		
	(b)	Explain with the help of neat sketch the working principle of Electrostatic precipitator. What are factors influencing its performance.	CO3-Ana	(16)
19.	(a)	Before starting an industry how do you prepare EIA report. Explain in detail.	CO4-App	(16)
		Or		
	(b)	What are ambient air quality standards? What are its objectives?	CO4-U	(16)
20.	(a)	How could noise pollution control be achieved by interfering in its transmission path?	CO5-U	(16)
		Or		
	(b)	Explain in detail about the sources of noise and its control measures.	CO5-U	(16)

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