U.S.N.										

B.M.S. College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

September / October 2024 Supplementary Examinations

Programme: B.E. **Semester: V**
Branch: Civil Engineering **Duration: 3 hrs.**
Course Code: 20CV5PEAPL **Max Marks: 100**
Course: Air Pollution

Instructions: 1. Answer any FIVE full questions, choosing one full question from each unit.
2. Missing data, if any, may be suitably assumed.

UNIT - I

1 a) Define air pollution. Explain the different sources of air pollution. **06**

b) List the effects of pollutants on human health, plants and materials. **06**

c) The exhaust gas from motor vehicle contains 1.5% by volume of carbon monoxide. Compute the concentration of CO in milligrams/m^3 at 25^0 C and 1 atmospheric pressure. The molecular weight of CO is 28 g/molecule and 1 molecule = 22.4 L at STP. **08**

UNIT - II

2 a) Illustrate various types of plumes associated with different atmospheric conditions. **08**

b) Describe the major layers of the atmosphere with a sketch. **06**

c) Enumerate different types of inversion conditions with neat sketch. **06**

UNIT - III

3 a) A coal fires 1000MW power plant generates daily huge quantity of fly ash, bottom ash, besides PM present in the burnt coal. Estimate the quantity of fly ash, bottom ash and PM generated daily by the plant. **10**

Following information are available:

- Calorific value of the coal (ash content 35%) burnt is 21 MJ/kg.
- 60% of fly ash is discharged as fly ash.
- 75% of fly ash and 90% of the bottom ash generated may be recovered.
- Overall efficiency of the plant is 40%.

b) Explain the settling chamber with a schematic diagram, write its advantages and disadvantages. **10**

UNIT - IV

4 a) Explain zoning and city planning. List the town planning regulations of new industries. **10**

	b)	Discuss isokinetic sampling conditions for particulates collection during stack monitoring.	**10**

OR

5	a)	Describe briefly the salient features of the Air Act 1981 (Prevention and Control of Air Pollution).	**10**
	b)	Discuss the different kinds of air quality standards.	**10**

UNIT - V

6	a)	Explain behavior of wind in the context of Coriolis force, pressure gradient and frictional force.	**10**
	b)	Discuss the sources, effects and control of noise pollution.	**10**

OR

7	a)	Explain the Thermodynamic aspects of gases.	**10**
	b)	Briefly explain the continuity equation and momentum equation for compressible flows.	**10**

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