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Question Paper Code : 40271

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2021.

Sixth Semester

Civil Engineering

CE8005 – AIR POLLUTION AND CONTROL ENGINEERING

(Regulations 2017)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Define primary and secondary air pollutants.
2. Write the purpose of stack sampling.
3. What are the types of wind rose diagram?
4. Define atmospheric stability.
5. Write any two advantages of fabric filters.
6. Write the principle involved in gravity separators.
7. What are biofilters?
8. Write the principles involved in condensation.
9. Write the sources of indoor air pollutants.
10. Write the ambient air quality standards in respect of noise in industrial area.

PART B — (5 × 13 = 65 marks)

11. (a) (i) Write the effects of air pollution on human health. (8)
(ii) Discuss the effects of CO and PM_{2.5}. (5)
- Or
- (b) (i) Explain the composition of atmosphere. (8)
(ii) Write the national ambient quality standards for industrial and residential areas. (5)

12. (a) (i) Explain with neat sketch the types of plume behavior. (9)
(ii) Explain the types of inversions. (4)

Or

- (b) (i) Explain Gaussian Plume Model with its advantages. (8)
(ii) Explain the meteorological parameters influencing the air pollution. (5)

13. (a) Explain with neat sketch the working principle, advantages and disadvantages of an centrifugal separators. (13)

Or

- (b) (i) Enumerate the operational considerations in electrostatic precipitator. (7)
(ii) Discuss the factors to be considered in selection of equipment for control of particulate contaminants. (6)

14. (a) (i) Explain the principle of absorption and adsorption for control of gaseous pollutants. (8)
(ii) Explain the working principle of a bio scrubber. (5)

Or

- (b) Explain with neat sketch the working principle of an incinerator with its advantages and disadvantages. (13)

15. (a) (i) Write the sources of indoor air pollution. (7)
(ii) What are the symptoms of sick building syndrome? (6)

Or

- (b) (i) Explain the effects of noise on human beings. (10)
(ii) Write the methods of eliminate or reduce noise. (3)

PART C — (1 × 15 = 15 marks)

16. (a) Suggest an air pollution control plan for a metropolitan city. (15)

Or

- (b) Discuss the control and preventive measures to be taken for noise pollution in a commercial complex. (15)