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SEAT No. :

[Total No. of Pages : 2

BE/INSEM/APR - 506
B.E. (Civil) (Semester - II)
401009D: AIR POLLUTION AND CONTROL
(2015 Pattern) (Elective - III)

Time : 1 Hour]

[Max. Marks : 30

Instructions to the candidates :

- 1) *Answer Q1 or Q2, Q3 or Q4, Q5 or Q6.*
- 2) *Figures to the right indicate full marks.*
- 3) *Draw neat figures wherever necessary.*
- 4) *Assume necessary data.*
- 5) *Use of scientific calculators is allowed.*

- Q1)** a) What is radiation and subsidence inversion. **[4]**
b) Explain the unstable, stable and neutral atmosphere with respect to environmental lapse rate and adiabatic lapse rate. **[6]**

OR

- Q2)** a) Write the Gaussian model equation and explain each term of it. **[4]**
b) A thermal power plant burns 100 tonnes of coal with 5.5% sulphur content. Calculate minimum stack height required. The particulate concentration in flue gas is 8000 mg/m³ and gas flow rate is 20 m³/s. **[6]**

- Q3)** a) What is iso kinetic, sub iso kinetic and super iso kinetic sampling? Why is it required? **[4]**
b) What are the annual and 24 hrs average concentrations of following pollutants in Industrial, Residential, Rural and other area prescribed by National Ambient Air Quality Standards 2009? **[6]**
- i) PM₁₀
 - ii) PM_{2.5}
 - iii) SO₂

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OR

Q4) a) Explain the method of sampling of ambient particulate matter. [4]

b) What are the annual and 24 hrs average concentrations of following pollutants in ecologically sensitive area prescribed by National Ambient Air Quality Standards 2009? [6]

i) PM_{10}

ii) $PM_{2.5}$

iii) SO_2

Q5) a) Write indoor air pollutants and their sources. [4]

b) Enlist odorous materials in following type of industries. [6]

i) Chemical

ii) Tanneries

iii) Fertilizer

iv) Food

v) Petroleum

vi) Pharmaceutical

OR

Q6) a) Explain the oxidation method used for eliminating the odours. [4]

b) How can the indoor air pollution be controlled using disinfection, ventilation and lighting? [6]

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