

Total No. of Questions : 10]

SEAT No. :

P3663

[4959]-1019

[Total No. of Pages : 2

B.E.(Civil)

**d: AIR POLLUTION AND CONTROL
(2012 Course)(Semester-II) (Elective-III)(End Sem)**

Time :2½Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) *Solve Q1 or Q2,Q3or Q4, Q5 or Q6 , Q 7 or Q 8, Q 9 or Q10.*
- 2) *Neat diagrams must be drawn wherever necessary.*
- 3) *Figures to the right indicate full marks.*
- 4) *Use of logarithmic tables, slide rule, Mollier charts, electronic pocket calculator and steam tables are allowed.*
- 5) *Assume suitable data, if necessary.*

Q1) a) What are the scales of meteorology? Explain. [6]

b) Explain the purpose of ambient air sampling and stack gas sampling.[4]

OR

Q2) a) A thermal power plant burns 120 tonnes of coal with 5.5% of sulphur content. Calculate minimum stack height required. The particulate concentration in flue gases is 10 g/m³ and the gas flow rate is 15m³/sec. [6]

b) Enlist primary meteorological factors influencing air pollution & explain each in brief. [4]

Q3) a) Write a short note on High volume sampler with sketch. [6]

b) What are the causes of indoor air pollution? [4]

OR

Q4) a) Explain Chemosphere and Ionosphere. [6]

b) Explain method of measurement of odour [4]

Q5) a) Explain with a sketch principle of bag filter. State factors required considering while selecting filter media for fabric filter. [8]

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- b) Design a parallel type electrostatic precipitator with 10 channels to handle $12000 \text{ m}^3/\text{hr}$ of gas for efficiency of i) 95%, ii) 97% and iii) 99%. Assume [8]
- i) velocity of particle = 0.1 m/sec ,
 - ii) height of plate = 2 m and
 - iii) spacing between plates = 0.15 m

OR

- Q6)** a) Explain working principle of a gravity settling chamber with a neat sketch and how the smallest size of particles removed can be found out?. [8]
- b) Explain control of air pollution at source by process modification, change of raw materials and equipment modifications. [8]
- Q7)** a) Explain the important provision made in “THE AIR(Prevention and control of Pollution)ACT 1981”. [8]
- b) Write in tabular form emission standards for parameters CO and HC for mobile sources: [8]
- i) Passenger cars and
 - ii) Heavy Diesel vehicles as per Central pollution Control Board Norms(Bharat Stage-III and IV)

OR

- Q8)** a) What is land use planning? Explain its importance in controlling air pollution. [8]
- b) Explain Cost-benefit analysis (CBA) or Cost-Benefit Ratio in view of : Purposes of CBA, Process, Evaluation, and Cost-benefit ratio analysis with example. [8]
- Q9)** a) Explain roles of Environment Consultant and the State Pollution Control Board in the EIA Process. [9]
- b) What is a need of Environmental Impact Assessment (EIA)? Also write about Indian policies requiring EIA. [9]

OR

- Q10)** a) Explain the EIA cycle and procedures. [9]
- b) Write a short note on the following EIA methodologies: [9]
- i) Ad Hoc Method and
 - ii) Checklists

