



Reg. No. : .....

Name : .....

**Seventh Semester B.Tech. Degree Examination, June 2018  
(2008 Scheme)**

**08.705.6 : Elective – III : AIR QUALITY MANAGEMENT (C)**

Time : 3 Hours

Max. Marks : 100

***Instruction : Answer all questions.***

**PART – A**

1. What are the scales usually used for air pollutant measurement ?
2. Explain greenhouse effect ?
3. What is indoor air pollution ?
4. What do you mean by the term 'Lapse rate' ?
5. Explain the effect of temperature on dispersion of air pollutants.
6. Explain the difference between a 'looping plume' and a 'trapping plume'.
7. What is freeze out sampling ?
8. What are ambient air quality standards ? **(8×5=40 Marks)**

**PART – B**

**Module – I**

9. Explain the effects of air pollutants on human beings, plants and animals. **20**

**OR**

10. a) Give a classification of air pollutants indicating various sources. **10**  
b) Explain the harmful effects of photochemical smog. **4**  
c) Explain the effect of air pollutants on building materials. **6**

**Module – II**

11. a) It is proposed to establish a power plant using 4% S coal. If the plant emits 8  $\mu\text{g/s}$  of sulphur dioxide every day from an effective stack height of 250 m, estimate the ground level concentration of  $\text{SO}_2$  at a down wind distance of 4 km, if the wind speed at 10 m height is 3.5 m/s on a cloudy summer day. (At 4 km down wind,  $\sigma_y = 359$  m,  $\sigma_z = 216$  m). 12
- b) Explain pasquill stability curve for atmospheric dispersion of pollutants. 8

OR

12. a) Derive a relation between pressure and altitude in atmosphere. 6
- b) Explain different conditions of atmospheric stability. 14

**Module – III**

13. Explain the different techniques used for gaseous emission control of air pollutants. 20

OR

14. a) Explain the working of a bag house filter with neat sketches. Also explain the different mechanisms involved in its particulate removal efficiency. 14
- b) Discuss the advantages and disadvantages of scrubbers. 6
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