

Faculty of Engineering & Technology
Seventh Semester B.E. (Civil)/8th Sem. B.E.P.T.
(Civil) Examination
ELECTIVE-I : AIR POLLUTION & SOLID WASTE
MANAGEMENT
Sections—A & B

Time—Three Hours]

[Maximum Marks—80

INSTRUCTIONS TO CANDIDATES

- (1) All questions carry marks as indicated.
- (2) Answer **THREE** questions from Section A and **THREE** questions from Section B.
- (3) Illustrate your answers wherever necessary with the help of neat sketches.
- (4) Use of slide rule, Logarithmic tables, Steam tables, Mollier's chart, Drawing instruments, Thermodynamic tables for moist air, Psychrometric charts and Refrigeration charts is permitted.

SECTION—A

1. (a) Explain : Smoke, Dust, Fog, Smog and Mist with their sources. 6
- (b) Write in detail about air pollution episodes. 7
2. (a) What is atmosphere ? Explain various zones of it, stating with temperature variations in each zone.

6

- (b) State and explain various meteorological parameters affecting dispersion of air pollutants. 7
3. (a) What do you understand by 'safe height of Chimney' ? How it is determined ? Explain in detail. 6
- (b) What is wind rose ? How it is plotted ? Give the importance of it in air pollution studies. 7
4. (a) Explain with neat sketch, working of 'Bag filter'. 6
- (b) What are wet scrubbers ? Explain with neat sketch, working of any one of them. 7
5. Write short notes on following (any **TWO**) :
- (i) Electrostatic Precipitator.
- (ii) Ambient air pollution monitoring by HVS.
- (iii) Automobile exhaust emission and its reduction.
- (iv) Effects of air pollution on human health. 14

SECTION—B

6. (a) What are the different components found in municipal solid waste ? Give the reasons for the higher and lower percentage of components. 6
- (b) What is solid waste management ? Explain, necessity of solid waste management. 7

7. (a) What is transfer station ? State and explain various types of it with neat sketch. 6

(b) What are the different methods of house-to-house collection of solid waste ? Explain with neat sketch. 7

8. (a) What is salvaging ? Explain in detail. 6

(b) What is 'Heuristic Method' ? What are the guiding principles and general steps involved in this method ? 7

9. (a) State and explain, various factors affecting composting. 6

(b) What is sanitary Land filling ? What are the site requirements for sanitary Land filling ? 7

10. Write short notes on following (any **TWO**) :

(i) 3-components diagram in incineration.

(ii) Transportation vehicle used in solid waste management.

(iii) Mechanical method of composting.

(iv) Procedure for determination of per capita solid waste. 14