

B.E. Civil Engineering (Model Curriculum) Semester-VIII
PEC-1 - Air Pollution and Solid Waste Management

P. Pages : 2

Time : Three Hours



GUG/S/25/14334

Max. Marks : 80

-
- Notes :
1. All questions carry equal marks.
 2. Assume suitable data wherever necessary.
 3. Illustrate your answers wherever necessary with the help of neat sketches.
 4. Due credit will be given to neatness and adequate dimensions.

1. a) Write in detail about various secondary air pollutants along with its composition and characteristics. 8
b) Give concentration of various pollutants in Ambient Air for industrial, residential, rural and other ecologically sensitive area (notified by central government) along with time weighted average. 8

OR

2. a) Give affect of each pollutant on material SO_2 , NO_x , CO , O_3 , PM_{10} , $\text{PM}_{2.5}$, H_2S , NH_3 , VOCs , Cl_2 , HCl , HF , HNO_3 . 8
b) Write in detail about air pollution episode held in New York, U.S.A. in (Nov. 1966) 8
3. a) Explain how S.P.M. concentration monitoring is carried out. 8
b) Write in detail about type of Inversion. 8

OR

4. a) Explain Tape sampler and impingement along with devices. 8
b) Write in detail about Special pollution roses:
Precipitation Wind Rose, Smoke Wind Rose, SO_2 Wind Rose, HC Wind Rose. 8
5. a) Explain vehicular emission of two stroke gasoline engines and four stroke diesel engines. 8
b) With neat sketch explain condensation units. 8

OR

6. a) According to IS : 1954 - 1968, give general reduction measures for noises at source. 8
b) Explain in detail about Direct Flame Combustion, Thermal Combustion, Catalytic Combustion. Draw diagram of each. 8

7. a) Explain Densification and refused derived fuel in physical processing of Solid Waste. 8
- b) Explain optimum sampling of Solid Waste. 8

OR

8. a) Explain characteristics of Solid Waste. 8
- b) Explain Deterministic method of route optimization in detail. 8
9. a) Explain with sketch multiple hearth Incineration. 8
- b) Explain various principles of composting. 8

OR

10. a) Explain control of gases from sanitary landfill. 8
- b) Write down the C : N ratio favorable for decomposition? If the C : N ratio is too low what happens in the composting? 8
