B.Sc. Part—III (Semester—V) Examination

ENVIRONMENTAL SCIENCE

(Pollution Control Technology)

Time : Three Hours] [Maximum Marks : 80

N.B. :— ALL questions are compulsory.

1. (A) Fill in the blanks :

   (a) Floating material from sewage is removed by ——— process. ½

   (b) For the safety of head, ——— is used. ½

   (c) Burning under controlled conditions is called ——— . ½

   (d) The long form of RPPE is ——— . ½

   (B) Choose correct option :

   (e) The scale for strong odour density is ——— .

   (i) 2

   (ii) 3

   (iii) 9

   (iv) 4 ½

(f) ——— chosen as an identifying characteristics of hazardous waste :

(i) Temperature and humidity

(ii) Colour and conductivity

(iii) Corrosivity and reactivity

(iv) BOD and COD. ½

(g) For removal of oil and grease impurities from water ——— process is used.

(i) Skimming

(ii) Flocculation

(iii) UASB

(iv) Aeration. ½

(h) Long form of UASB is ———.

(i) Upflow anaerobic sludge blanket

(ii) Upflow aerobic sludge blanket

(iii) Uniform anaerobic sludge blanket

(iv) Ultimate anaerobic sludge blanket. ½

(C) Answer in **one** sentence :

(i) Define odour intensity. 1

6. (a) Define biomedical waste. Give the classification of biomedical waste. 4

(b) Discuss the Incineration as a treatment to biomedical waste. 4

(c) Which precautions are necessary to store Radioactive waste ? 4

OR

(d) Explain the process of composting as a treatment and disposal method of Bio-medical waste. 4

(e) Which precautions are necessary to dispose radioactive waste ? 4

(f) Discuss one case study as an accident caused due to improper handling of radioactive waste. 4

7. Describe in brief :

(a) Precautions in storing explosive materials. 4

(b) What is the need of Respiratory Personal Protective Equipment (RPPE) ? 4

(c) Face and eye protection equipments. 4

OR

(d) Which precautions are necessary to store flammable material ? 4

(e) Non-Respiratory Personal Protective Equipment (NRPPE). 4

(f) Head and ear protection equipments. 4

(ii) Give the types of Air pollutant. 1

(iii) Give the characteristics of hazardous waste. 1

(iv) Define incineration. 1

2. Explain in short :

(a) Estimation of SPM. 4

(b) The need of Air Quality Standards. 4

(c) Define sampling. Discuss Ambient Air Quality Sampling. 4

OR

(d) City planning with respect to MIDC. 4

(e) Precautionary steps to control greenhouse gases. 4

(f) Source correction method. 4

3. (a) Explain the working of Fabric Filters with diagram. 4

(b) Explain the precautions required to control odour. 4

(c) What is the role of catalytic oxidation ? 4

OR

(d) Which driving habits are helpful to control auto exhaust emission ? 4

(e) What is the role of catalytic converter ? 4

(f) Which alternative Fuels are helpful to control auto exhaust emission and how ? 4

4. (a) Discuss the process of Upflow anaerobic sludge blanket with diagram. 6

(b) Discuss sedimentation with well labelled diagram. 6

OR

(c) Explain the processes of screening and skimming. 6

(d) Explain the types and characteristics of sludge. 6

5. Explain sources, composition and characteristics of solid waste. Discuss sanitary landfill as a disposal method. 12

OR

Mention in detail sources and classification of Radioactive waste. Suggest the steps and methods involved in management of radioactive wastes 12