

K-18/2/110

7501/N

Environmental Biotechnology

Time 3 hrs

Paper XI (Sem-III)

M.M. 75

Note : Candidates are required to attempt two question each from Sections A and B carrying 15 marks each and entire section C consisting of 10 short answer type questions carrying 1.5 marks each.

Section-A

1. Define waste? Why its management is necessary? What are various bioremediation technologies employed for waste treatment?
2. What is containment and why it is necessary? Give the design for containment and treatment of biohazardous wastes?
3. Explain different anaerobic treatment technologies of waste water by giving operation details? Describe physico-chemical parameters used to ascertain water as polluted water?
4. Explain the role of natural and genetically engineered microorganisms in bioremediation of xenobiotics and recalcitrant compounds?

Section-B

5. What is aerosol contamination and what are its consequences? How treatment of waste air can be achieved?
6. What are different types of transducer's and their role in development of biosensor's?
7. What are different designs of anaerobic digestors used for the treatment of solid wastes? What biochemical reactions and microorganisms are involved.
7. Explain BOD biosensor and how they are constructed for detection of pathogens?

Section-C

9. Define, describe or explain following:
 - i. Biogas plant
 - ii. Chemical treatment of industrial wastes
 - iii. Transducers
 - iv. Heavy metal pollution
 - v. Factors affecting composting
 - vi. Zinc finger and whole cell biosensor
 - vii. Enzymatic biomarkers
 - viii. Biological deodorization
 - ix. Toxicity of pollutants on animals
 - x. Tapered aeration system (TAAS)