

Duration: 2 hrs 30 min.

MaxMarks-75

N.B 1) All Questions are compulsory.

2) Draw neat and labeled diagrams wherever necessary

3) Figures to right indicate full marks.

Q.1) Answer the following (Each question carries 4 marks)

20

a) Write a note on microbial pesticides.

OR

a) What is bacterization? Which type of micro organisms are used as microbial inoculants?

b) Explain Bioremediation of xenobiotics.

OR

b) Explain ex-situ bioremediation.

c) Explain bioremediation of contaminated soil.

OR

c) Explain bioremediation of heavy metals.

d) Write the applications of biological control in field.

OR

d) Explain bioremediation of industrial waste

e) What are biofertilizers? Give their benefits.

OR

e) Explain types of biological control.

Q.2) Answer the following (Each question carries 4 marks)

20

a) Explain the terms: i) pharmacology ii) Pharmacokinetics iii) Pharmacodynamics

OR

a) Why are drugs formulated and given in particular dosage forms?

OR

b) Write a note on alcoholic solutions and aqueous suspension of drugs.

OR

b) Explain the different sources of drugs.

c) Write in brief about the nomenclature of drugs.

OR

c) Briefly explain the oral, rectal and sublingual routes of drug administration.

d) Write a note on liquid dosage form of drugs.

OR

d) Write a note on parenteral route of drug administration

e) Discuss the factors affecting drug dosage forms.

OR

e) Explain the terms: i) half life ii) LD<sub>50</sub> iii) ED<sub>50</sub> iv) TD<sub>50</sub>

**Q.3) Answer the following: ( Each question carries 4 marks)**

20

a) Explain the various steps under primary treatment of wastewater.

**OR**

a) Explain the preliminary process for waste water treatment.

b) Explain the process of recycling of solid waste.

**OR**

b) Write a short note on facultative pond.

c) Write a note on disinfection.

**OR**

c) Give the construction and working of Biogas plant.

d) Discuss the various uses of fossil fuels.

**OR**

d) Draw a labeled diagram of packed bed reactors and trickling filters.

e) Give the construction and applications of Biogas plant.

**OR**

e) Enlist any two methods to detect pathogenic organisms in sewage.

**Q.4) A) Answer the following.(Each question carries 3 marks)**

a) Explain GEM.

**OR**

a) Write a note on insects as biocontrol agents.

b) Write a note on classification of drug.

**OR**

b) Write a note on novel drug delivery system.

c) Explain the term renewable energy sources.

**OR**

c) What are skimming tanks?

**Q.4) B) Answer the following. (Each question carries 2 marks)**

a) What is amensalism?

**OR**

a) What is biopesticide?

b) What are spores?

**OR**

b) What are magmas?

c) Give the applications of Biogas gas.

**OR**

c) Give two examples of each: 1) Energy rich crops 2) Disinfection technique.

15