PG EVEN SEMESTER EXAMINATION, 2024

ECOLOGY AND ENVIRONMENTAL SCIENCE

4th Semester

Course No. : ECGCC - 651

(Environmental Biotechnology and Chemistry)

Full Marks : 70

Pass Marks : 28

Time : 3 hours

The figures in the margin indicate full marks for the questions

(Answer any five questions, selecting one from each unit)

Unit - I

1. Mention how the concept of biotechnology is useful in protecting our environment. Explain the usefulness of biotechnology with relevance to cleaning the environment. 3+11=14

2. Write notes on : 7x2=14
   a) Bioplastics
   b) Applications of green chemistry

Unit - II

3. Define vermicomposting. Elaborate the different phases involved in the process of vermicomposting. Enumerate its importance as a solid waste management technique. 2+5+7=14

(Turn Over)

4. Write notes on : 7x2=14
   a) Waste water treatment process
   b) Advanced water purification technologies

Unit - III

5. Define biofuel. Explain the process of biogas production. Mention four types of MRNE approved bioreactors for biogas production. 3+7+4=14

6. Write notes on : 7x2=14
   a) Bio-hydrogen as an energy source
   b) Single cell protein

Unit - IV

7. Discuss briefly about stoichiometry. Explain about the main types of analysis in stoichiometry. 6+8=14

8. Write short notes on : 7x2=14
   a) Carbonate system
   b) Saturated and unsaturated hydrocarbons

Unit - V

9. Discuss the components and working procedure of X-ray diffracton. 5+9=14

10. Write short notes on : 7x2=14
    a) Gas chromatography
    b) Working principle of colorimeter with a diagram

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