2020
ENVIRONMENTAL SCIENCE
[HONOURS]
Paper : I

Full Marks : 75   Time : 4 Hours

The figures in the right-hand margin indicate marks.
Candidates are required to give their answers in
their own words as far as practicable.

1. Define the following terms (any **five**):   1×5=5

    a)   Ecological pyramid

    b)   Sustainable development

    c)   Biodiversity hotspot

    d)   Stoichiometry

    e)   Bioethics

    f)   TRIPS

    g)   Ecotone

2. Answer any **six** of the following: 2×6=12

    a)   State the importance of bioethics.

    b)   Define green movement with an example.

    c)   State the importance of phosphorus in the biological system.

    d)   Explain the levels of biodiversity.

    e)   Distinguish between ecological niche and habitat.

    f)   Enumerate six most important elements of life.

    g)   State the reasons of mass extinction of life on the earth.

    h)   Mention the composition of prebiotic atmosphere of the earth.

    i)   Distinguish between anthropocentrism and ecocentrism.

    j)   What are the defining features/conditions of 'biodiversity hotspot'?

3. Write short notes on any **three** of the following :
                                        6×3=18

    a)   Biodiversity status in India.

    b)   Conservation of threatened wild species.

    c)   Bioinorganic complexes and their importance.

    d)   Solid waste management.

    e)   Principles of coagulation, sedimentation and absorption.

f) Environmental movements viz. Chipko Movement and Narmada Bachao Andolan.

4. Answer any **four** of the following: 10×4=40

a) Define ecological succession. Why does secondary succession occur faster than primary succession? Describe in brief the successional stages of hydrosere showing continuous but gradual changes in complexity subject to prevailing abiotic and biotic factors. 2+2+6=10

b) Explain the causes and effects of acidity and alkalinity in soil. Write a brief account on buffering of pH in soils and its importance. 5+5=10

c) State the principle and environmental applications of the following processes:

   i) sedimentation

   ii) coagulation

   iii) filtration

   iv) adsorption

   v) oxidation 2×5=10

d) State the ecological services provided by forests. Enumerate the forest categories found in India including their geographical distribution. Write a short note on joint forest management. 3+4+3=10

e) Define biodiversity. Describe the causes of biodiversity loss and conservation strategies with particular reference to India. 2+8=10

f) Define limiting factor with an example. Describe the influence of light and temperature on plant and animal life. 2+8=10

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