U.G. 1st Semester Examination - 2023
ENVIRONMENTAL SCIENCE
[MAJOR]
Course Code : ENVS-M-1-L
(Fundamentals of Environment and Ecology)
[NEP-2020]

Full Marks : 40   Time : $2\frac{1}{2}$ 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.   Answer any **five** of the following: 2×5=10

   a)   Define anthroposphere.

   b)   State Liebig's law of minimum.

   c)   Distinguish between source population and sink population.

   d)   Distinguish between mutualism and protocooperation.

   e)   What is meant by the term ecosystem homeostasis?

   f)   Define keystone species.

   g)   Differentiate gross primary productivity from net primary productivity.

   h)   What is turnover time?

[Turn over]

2. Answer any **two** of the following: 5×2=10

    a)   Write a note on origin of life with special reference to chemical and biochemical evolution.

    b)   Illustrate the vertical structure and composition of atmosphere.

    c)   Discuss the logistic population growth model.

    d)   Write a short note on biological nitrogen fixation.

3. Answer any **two** of the following: 10×2=20

    a)   Define ecosystem. Discuss the major components of any ecosystem. Explain any two energy flow model of an ecosystem.

                            2+3+5=10

    b)   Define ecological niche. Discuss the Hutchinsonian model of niche with an example. Explain the strategies in plants for thermoregulation.   2+4+4=10

    c)   Define population. Write down the major characteristics of population of any region. Discuss the survivorship curve with the help of a neat sketch.   2+4+4=10

    d)   Define community. Write a note on community structure and organization. Illustrate the different types of interspecies interactions with examples.   2+4+4=10