

U.G. 3rd Semester Examination-2020**ENVIRONMENTAL SCIENCE****[HONOURS]****Course Code : ENVS-H-CC-L-05****(Ecology and Ecosystems)**

Full Marks : 40

Time : 2½ 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: $2 \times 5 = 10$
- Define keystone species with example.
 - Explain edge effect.
 - Define invasive species with examples.
 - Define proto-cooperation with example.
 - Differentiate between fundamental and realized niche.
 - State the Liebig's law of the minimum.
 - Define ecocline.
 - Cite examples of thermo-tolerant and halo-tolerant plant species.
2. Answer any **two** of the following: $5 \times 2 = 10$
- Give a brief account of different types of mutualistic relationships.

- Write a short note on Shelford's law of tolerance.
 - Write a short note on grassland ecosystem.
 - Explain niche breadth. How does it affect individual's survival strategy? $3+2=5$
3. Answer any **two** of the following: $10 \times 2 = 20$
- Mention the salient features of a population. How do interactions between different trophic level affect the size of a population? Explain survivorship curve with illustration. $3+3+4=10$
 - Describe interrelationship between matter and energy in context of primary and secondary productivity. Compare between assimilation and consumption efficiency. Explain energy flow in a model community. $5+3+2=10$
 - Compare between environmental tolerance and successional tolerance. Give detailed account on an autogenic succession. $5+5=10$
 - Distinguish between k selection and r selection. Describe the exponential population growth pattern with corresponding equation and illustration. $5+5=10$

[Turn over]