Total number of printed pages–4

3 (Sem–1/CBCS) ZOO HC 2

2023

ZOOLOGY

(Honours Core)

Paper : ZOO–HC–1026

(Principles of Ecology)

Full Marks : 60

Time : Three hours

The figures in the margin indicate full marks for the questions.

1. Choose the correct answer : 1×7=7

   (a) An assemblage of populations of living organisms inhabiting a prescribed area or habitat is called

   (i) Community

   (ii) Ecosystem

   (iii) Population

   (iv) None of the above

Contd.

(b) Animals that cannot tolerate very large variations in temperature are called

(i) Stenohaline

(ii) Eurythermal

(iii) Euryhaline

(iv) Stenothermal

(c) The term ecology was coined by

(i) Ernst Haeckel

(ii) E.P. Odum

(iii) F. Kormondy

(iv) A. G. Tansley

(d) Threatened species include

(i) critically endangered species

(ii) endangered species

(iii) vulnerable species

(iv) All of the above

(e) Captive breeding

(i) helps prevent immediate extinction

(ii) involves reintroduction into wild

(iii) is a part of in-situ conservation

(iv) is a part of ex-situ conservation

(f) The main source of nitrogen in the biosphere is

(i) Atmosphere

(ii) Ocean

(iii) Organism

(iv) Rocks

(g) Which of the following ecological pyramid is always upright?

(i) Pyramid of numbers

(ii) Pyramid of biomass

(iii) Pyramid of energy

(iv) None of the above

2. Write brief answers to the following questions : 2×4=8

(i) What is *k*-selection?

(ii) What is a pioneer community?

(iii) How is ecotone related to edge effect?

(iv) Define ecological niche.

3. Write short notes on : ***(any three)*** 5×3=15

(a) Lotka-Volterra equation for competetion

(b) Secondary ecological succession

(c) Population density

(d) Population age structure

(e) Exponential population growth

4. *(a)* State the 'Competetive Exclusion Principle'. Illustrate the concept with a suitable experiment. 2+8=10

Or

(b) What do you understand by the energy flow in an ecosystem? Elucidate the conecpt of energy flow taking grazing food chain as an example. 2+8=10

5. *(a)* What is wild life conservation? Describe the causes of wild life depletion in India. Suggest *at least three* measures for conservation of wildlife. 2+5+3=10

Or

(b) Define an ecosystem. Discuss the structure and function of a typical ecosystem taking pond as an example. 2+8=10

6. *(a)* What is a biogeochemical cycle? Name *two* biogeochemical cycles which lack gaseous phase. Describe nitrogen cycle with a appropriate diagrams. 2+2+6=10

Or

(b) What is a limiting factor? Elucidate the concept of limiting factors with the help of Shelford's law of tolerance. Add a note on combined concept of limiting factor. 2+5+3=10
