1 (Sem–4/FYUGP) ZLG 43 MJ

2026

ZOOLOGY

(Major)

Paper : ZLG4400304MJ

(Fundamentals of Ecology)

Full Marks : 45

Time : 2 hours

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

1. Choose the correct option : 1×5=5

(a) The term ecology was coined by

(i) Ernst Haeckel

(ii) E. P. Odum

(iii) F. Kormondy

(iv) A. G. Tansley

(b) Animals that can tolerate very large variations in salinity are called —

(i) Stenohaline

(ii) Eurythermal

(iii) Euryhaline

(iv) Stenothermal

(c) The formula for exponential population growth is

(i) $dN/dt = rN$

(ii) $dt/dN = rN$

(iii) $dn/rN = dt$

(iv) $rN/dN = dt$

(d) The carrying capacity of a population is determined by its

(i) Population growth rate

(ii) Natality

(iii) Mortality

(iv) Limiting resources

(e) The association in which a specie lives on or inside another harming it is known as

(i) Ammensalism

(ii) Commensalism

(iii) Neutralism

(iv) Parasitism

2. Answer the following questions : ***(any five)*** 2×5=10

(a) Name the factors affecting population density.

(b) What do you mean by carrying capacity ?

(c) What is ∂-selection ?

(d) What do you mean by Limiting factors ?

(e) What is Synecology ?

(f) Define Food web.

(g) What is Species dominance ?

(h) What is keystone species ?

(i) Define Biome.

(j) What is Natality ?

3. Write short notes on : ***(any four)*** 5×4=20

(a) Exponential population growth

(b) Ecology as a multidisciplinary science

(c) Grazing food chain and detritus food chain

(d) Climax community

(e) Life tables and survivorship curve

(f) Lentic and lotic ecosystem

(g) Ecological pyramids

(h) Home range and territoriality

4. Answer the following : ***(any one)*** 10×1=10

(a) Describe the concept of ecological succession with a suitable example.

(b) What is biogeochemical cycle ? Describe the nitrogen cycle with appropriate diagram.

(c) Describe in brief the different types of natural ecosystems.

(d) What is meant by ecological energetics ? Describe the flow of energy in an ecosystem with the help of suitable diagrammatic representation.

———