

B.Sc. ZOOLOGY
First Semester
DIVERSITY ECOLOGY & BIOTECHNOLOGY
BSZ – 106 (MAJOR)

Duration: 3Hrs.

Full Marks: 70

Part-A (Objective) =20
Part-B (Descriptive) =50

(PART-B: Descriptive)

Duration: 2 hrs. 40 mins.

Marks: 50

**Answer any four from *Question no. 2 to 8*
*Question no. 1 is compulsory.***

1. Describe the lifecycle and pathogenicity of *Fasciola hepatica* with suitable diagram. (8+2=10)
2. Explain the mechanism of Torsion in Gastropoda with diagram. What is Detorsion? (7+3=10)
3. Enumerate the general characters of Phylum Coelentrata. Compare the structures of Polyp and Medusae. Name any two coelentrates that form corals. (5+4+1=10)
4. Discuss the general characters of Protozoa and classify the phylum up to subclasses. (5+5=10)
5. Write a note on gene cloning. Explain with diagram. (8+2=10)
6. Describe the working principle of Electrophoresis along with its application. (7+3=10)
7. What is a biogeochemical cycle? Describe the nitrogen cycle in detail. (2+4+4=10)
8. What is ecosystem energetics? Discuss the unidirectional and Y- shaped energy flow model in detail. (2+4+4=10)

10. Sieve plate present in the water vascular system of echinoderms is termed as-
- Madreporite
 - Ossicle
 - Podium
 - Polian Vesicle
11. During electrophoresis the speed of migration of ions in an electric field depends on
- Magnitude of charge and mass of molecules
 - Magnitude of charge and shape of molecules
 - Shape and size of molecules
 - Magnitude of charge, shape and mass of molecules
12. A characteristic feature of any form of chromatography is the-
- Use of molecules that are soluble in water
 - Calculation of an R_f value for the molecules separated
 - Use of a mobile and a stationary phase
 - Use of an inert carrier gas
13. Which of the following is used for cutting DNA segment at specific places?
- E. coli* restriction endonuclease II
 - Ligase
 - Endonuclease
 - Alkaline Phosphatase
14. Energy flow in an ecosystem is
- Unidirectional
 - Bidirectional
 - Both a and b
 - Only a
15. What is the main function of statocyst in Prawn?
- Balance receptor
 - Respiratory organ
 - Digestive organ
 - Contractile vacuole
16. Metamerism is a general character of which phylum
- Annelida
 - Coelenterata
 - Porifera
 - Echinodermata
17. In the Phylum Annelida, Leech is classified under class
- Hirudinea
 - Polychaeta
 - Oligochaeta
 - Archiannelida
18. Who is called the father of Ecology?
- E. P. Odum
 - Tansley
 - Isaac Newton
 - James Watson
19. Food chain can be of this type
- Grazing
 - Detritus
 - Both
 - Only a
20. The dissolved impurities normally present in water are
- H_2S
 - CO_2
 - NH_3
 - All of them
