REV-00 BSZ/22/28

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

Duration: 3Hrs.

Full Marks: 70

Marks: 50

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

(PART-B: Descriptive)

Duration: 2 hrs. 40 mins.

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

1.	. Describe the lifecycle and pathogenicity of <i>Fasciola hepatica</i> 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	e structures c	
	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 subclasse	
		(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)

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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)

2016/12

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Duration: 20 minutes

(PART A - Objective Type)

I. Choose the correct answer:

- 1. Polymorphism is an important characteristic of the Phylum
 - a) Porifera b) Platyhelminthes
 - c) Coelentrates d) Annelida
- 2. The phenomenon of cyclosis in Paramecium is associated with
 - a) Respiration b) Locomotion
 - c) Digestion d) Excretion
- 3. Which of the following is not a locomotory organelle in Protozoans?
 - a) Cilia b) Flagella
 - c) Setae d) Pseudopodia

4. Ascaris belongs to the class-

- a) Nematoda b) Rotifera
- c) Trematoda d) Nematophora
- 5. Which of the following is the first larval stage of Fasciola hepatica?
 - a) Redia b) Miracidium
 - c) Cercaria d) Metacercaria
- 6. Entamoeba histolytica is a type of
 - a) Ectoparasite b) Endoparasite
 - c) Hyperparasite d) None of the above
- 7. The respiratory pigment of Mollusca is composed of
 - a) Cobalt b) Iron
 - c) Copper d) Manganese
- 8. The sensory structure responsible for maintaining balance & equilibrium in Molluscan body is
 - a) Osphradium b) Lithocyst
 - c) Radula d) Ctenidia
- 9. Exoskeleton of Echinoderms is originated from
 - a) Epidermis b) Dermis
 - c) Endodermis d) Exoskeleton is absent

1×20=20

Marks - 20

10. Seive plate present in the water vascular system of echinoderms is termed as-

- a) Madreporite b) Ossicle
- c) Podium d) Polian Vesicle

11.During electrophoresis the speed of migration of ions in an electric field depends on

- a) Magnitude of charge and mass of molecules
- b) Magnitude of charge and shape of molecules
- c) Shape and size of molecules
- d) Magnitude of charge, shape and mass of molecules

12.A characteristic feature of any form of chromatography is the-

- a) Use of molecules that are soluble in water
- b) Calculation of an R_f value for the molecules separated
- c) Use of a mobile and a stationary phase
- d) Use of an inert carrier gas

13. Which of the following is used for cutting DNA segment at specific places?

- a) *E. coli* restriction endonuclease II b) Ligase
- c) Endonuclease d) Alkaline Phosphatase

14. Energy flow in an ecosystem is

a) Unidirectional	b) Bidirectional
c) Both a and b	d) Only a

15. What is the main function of statocyst in Prawn?

a) Balance receptor	b) Respiratory organ	
c) Digestive organ	d) Contractile vacuole	

16.Metamerism is a general character of which phylum

- a) Annelida b) Coelenterata
- c) Porifera d) Echinodermata

17.In the Phylum Annelida, Leech is classified under class

- a) Hirudinea b) Polychaeta
- c) Oligochaeta d) Archiannelida

18. Who is called the father of Ecology?

a) E. P. Odum	b) Tansley
c) Isaac Newton	d) James Watson

19.Food chain can be of this type

a) Grazing	b) Detritus
c) Both	d) Only a

20. The dissolved impurities normally present in water are a) H₂S b) CO₂ c) NH₃ d) All of them
