

Write the following information in the first page of Answer Script before starting answer

**ODD SEMESTER EXAMINATION: 2020-21**

Exam ID Number \_\_\_\_\_

Course \_\_\_\_\_ Semester \_\_\_\_\_

Paper Code \_\_\_\_\_ Paper Title \_\_\_\_\_

Type of Exam: \_\_\_\_\_ (Regular/Back/Improvement)

**Important Instruction for students:**

1. Student should write objective and descriptive answer on plain white paper.
2. Give page number in each page starting from 1<sup>st</sup> page.
3. After completion of examination, Scan all pages, convert into a single PDF and upload to the Google classroom as attachment.
4. Exam timing from 10am – 1pm (for morning shift).
5. Question Paper will be uploaded before 10 mins from the schedule time.
6. Additional 20 mins time will be given for scanning and uploading the single PDF file.
7. Student will be marked as ABSENT if failed to upload the PDF answer script due to any reason.

**B.Sc. ZOOLOGY**  
**THIRD SEMESTER**  
**INVERTEBRATE DIVERSITY, ECOLOGY & BIOTECHNOLOGY**  
**BSZ - 711**

Duration : 3 hrs.

Full Marks : 70

( PART-A: Objective )

Time : 20 min.

Marks : 20

*Choose the correct answer from the following:*

**1×20=20**

1. Protozoans respire through-
  - a. General body surface
  - b. Pseudopodia
  - c. Contractile vacuole
  - d. cilia
2. Simplest type of canal system is-
  - a. Ascon
  - b. Sycon
  - c. Leucon
  - d. Rhagon
3. The sponges have no respiratory organs because they-
  - a. respire anaerobically
  - b. do not respire
  - c. Are sedentary
  - d. Have highly porous body.
4. To which class the Paramecium belongs-
  - a. Phytomastigophra
  - b. Zoomastigophora
  - c. Ciliata
  - d. None of the above.
5. A process using microbes to convert toxic industrial wastes to less toxic or non-toxic compounds is
  - a. Precipitation
  - b. biofixation
  - c. bioremediation
  - d. bioconversion
6. When is electrophoresis not used?
  - a. Separation of proteins
  - b. Separation of amino acids
  - c. Separation of lipids
  - d. Separation of nucleic acids
7. The principle on which thin layer chromatography is based is that the \_\_\_\_\_
  - a. Different compounds are absorbed on an adsorbent to different degrees
  - b. different compounds are absorbed on an adsorbent to same degrees
  - c. Different compounds are adsorbed on an adsorbent to different degrees
  - d. Different compounds are absorbed on an adsorbent to same degrees
8. Segments of Tapeworm are called-
  - a. Scolex
  - b. onchospheres
  - c. proglotids
  - d. cysticercus
9. Which is the free swimming stage in Fasciola
  - a. Redia
  - b. sporocyst
  - c. miracidium
  - d. None of the above

10. All worms are  
a. Triploblastic  
c. endoparasites  
b. Free living  
d. segmented
11. Who proposed the term ecosystem?  
a. Grinnel  
c. A.G. Tansley  
b. Turesson  
d. Lindeman
12. Which of the following describe the study of group of the population?  
a. Synecology  
c. Biomes  
b. Autecology  
d. Community
13. Pyramid of numbers for grassland ecosystem is \_\_\_\_\_  
a. Decreases  
c. Inverted  
b. Lateral  
d. Upright
14. Which of the following statement is CORRECT about the pyramid of energy?  
a. It is always upright  
c. It doesn't exist  
b. It is always inverted  
d. It varies with the trophic level
15. Which of the following ecosystem consists of forest, grassland and deserts?  
a. Artificial ecosystem  
c. Natural ecosystem  
b. Aquatic ecosystem  
d. Terrestrial ecosystem
16. Mark the one, which comes under a lotic ecosystem?  
a. Ocean  
c. Pond  
b. Lake  
d. River
17. Segmented body is presented in-  
a. Annelids  
c. Mollusca  
b. Porifera  
d. Coelenterate
18. The excretory organ of annelids are-  
a. Flame cells  
c. Nephridia  
b. Nephrostomes  
d. None of these
19. Arthropod exoskeleton is made of-  
a. Chitin only  
c. Protein and collagen  
b. Chitin and protein  
d. Collagen and chitin
20. Organisms that are well defined as soft bodied animals are called-  
a. Arthropods  
c. Molluscs  
b. Nematodes  
d. Echinodermata

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**PART-B : Descriptive**

Time : 2 hrs. 40 min.

Marks : 50

**[ Answer question no.1 & any four (4) from the rest ]**

1. What are Poriferans? State important characters of Poriferans 2+8=10
  
2. a. Discuss about the polymorphism in coelenterates. 6+4=10  
b. Differentiate between polyp and medusa.
  
3. a. Discuss in details the life cycle of a liver fluke with diagrams . 6+4=10  
b. Mention about any two parasitic adaptations of platyhelminthes.
  
4. Write short notes on : 5+5=10  
a. Bioremediation  
b. Gel electrophoresis
  
5. What is Ecosystem? Discuss different types of ecosystems with examples. 3+7=10
  
6. What is Pollution? Discuss about water pollution along with different mitigation strategies. 2+8=10
  
7. Write general Characteristics of phylum annelid. Write a note on urinogenital system of Leech. 5+5=10
  
8. Write short Notes on- (*any two*) 2×5=10  
a. Different mouth parts of insects  
b. General Characteristics of Phylum Mollusca.  
c. Canal system in Echinodermates.

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