

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.

**M.Sc. ZOOLOGY**  
**THIRD SEMESTER**  
**PARASITOLOGY, ENTOMOLOGY & AQUATIC BIOLOGY**  
**MSZ - 302**

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. Which one is not correct for key pest species
  - a. Species specific
  - b. Dietary harvestable part
  - c. Occasionally appear
  - d. Population always above the damage threshold level.
2. Which one of the following is a monophagus pest.
  - a. Mealy bug
  - b. Citrus butterfly
  - c. Brinjal fruit borer
  - d. Honey Bee
3. Defoliators feed on
  - a. Root
  - b. Leaf
  - c. Bark
  - d. Fruit
4. Which part of the paddy plant is destroyed by Rice Gandhi Bug *Leptocorisa varicornius* ?
  - a. Root
  - b. Shoot
  - c. Leaf
  - d. Milky part of grain
5. If temperature decreases, the DO level in water –
  - a. Increase
  - b. Decrease
  - c. Constant
  - d. None of these
6. Which water contains lesser amount of dissolve oxygen (DO)?
  - a. Sea water
  - b. Beel water
  - c. River water
  - d. None of these
7. COD refers the requirement of DO for the oxidation of –
  - a. Organic compounds
  - b. Inorganic compounds
  - c. Both a & b
  - d. None of these
8. The amount of solar radiation reaching the surface of the earth is –
  - a. 2000 cal/sq. cm. / min
  - b. 200 cal/sq. cm. / min.
  - c. 20 cal/sq. cm. / min
  - d. None of the above
9. Hypnozoites found in
  - a. *P. vivex* and *P. ovale*
  - b. *P. ovale* and *P. malariae*
  - c. *P. malariae* and *P. falciparum*
  - d. *P. falciparum* and *P. vivex*

10. The intensity of temperature of an area varies within the same day, is called -
- |                           |                      |
|---------------------------|----------------------|
| a. Thermal stratification | b. Diurnal variation |
| c. Both a&b               | d. None of these     |
- 
11. Freshwater is -
- |              |                  |
|--------------|------------------|
| a. Hypotonic | b. Hypertonic    |
| c. Isotonic  | d. None of these |
- 
12. Which of the following pond categories as the temporary pond?
- |                   |                          |
|-------------------|--------------------------|
| a. Vernal Ponds   | b. Vernal Autumnal Ponds |
| c. Aestival Ponds | d. All of these          |
- 
13. Organism which may either live as parasitic form or as free living form called
- |                         |                        |
|-------------------------|------------------------|
| a. Facultative Parasite | b. Obligate Parasite   |
| c. Aberrant Parasite    | c. Accidental parasite |
- 
14. Glazing is dipping the frozen fish in water so that
- |   |                                 |
|---|---------------------------------|
| a. Finally a layer of hard ice surrounds the fish | b. Crystal surround the fish    |
| c. Water vapour surrounds the fish                | d. No formation of ice is there |
- 
15. Promastigote form of *Leishmania donovani* found in
- |                         |                      |
|-------------------------|----------------------|
| a. Man                  | b. Sandfly           |
| c. Both man and sandfly | d. None of the above |
- 
16. Excess salting allows growth of salt tolerant bacteria causing
- |                               |                              |
|-------------------------------|------------------------------|
| a. White eye spoilage of fish | b. Pink eye spoilage of fish |
| c. Both (a) and (b)           | d. None of the above         |
- 
17. Kinetoplast of Hemoflagellates consist of a deeply staining parabasal body and adjacent dot-like blepharoplast
- |  |
|--|
| a. Parabasal body and Axoneme            |
| b. Axoneme and Undulating membrane       |
| c. Undulating membrane and Blepharoplast |
| d. Parabasal body and Blepharoplast      |
- 
18. The tissue responsible for producing pearl nacre is
- |   |                     |
|---|---------------------|
| a. The mantle with its outer epithelial cells | b. Inner epithelium |
| c. The outer shell                            | d. All of the above |
- 
19. *Dactylogyrus* is found on the gills and can be distinguished from *Gyrodactylus* by the presence of
- |  |
|--|
| a. Three pairs of eyes at the anterior end |
| b. Two pairs of eyes at the anterior end   |
| c. One pair of eyes at the anterior end    |
| d. Four pairs of eyes at the anterior end  |
- 
20. A fish is of good market value if it weighs
- |                         |                    |
|-------------------------|--------------------|
| a. 9 gm and above       | b. 70 gm and above |
| c. 750 gm and and above | d. 11 gm           |

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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. Discuss the salient features of pearl farming in India 10
  
2. What is composite fish culture? Outline some of the objectives and principles of composite fish culture and highlight some important aspects of composite fish culture in India 1+2+7=10
  
3. What is fish preservation? Mention two methods of salting in fishes and add a note on 'Canning' process used in fish preservation 1+2+7=10
  
4. What are the different diseases caused by various species of genus *Leishmania*? Describe the life cycle of *L. donovani* with suitable diagram 2+8=10
  
5. Write short notes on : 2.5×4= 10
  - a. Importance of Dissolved Oxygen
  - b. Importance of Ph
  - c. Salinity
  
6. Define pest. Write a note on types of pest found in agro-ecosystem 2+8=10
  
7. Describe the life cycle of a paddy pest. Mention the damages done by the pest. 6+4=10
  
8. What is apical complex? Describe the Gametogamy and Sporogamy phase of Plasmodium with suitable diagram. 2+8=10

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