

[Time: 03 Hours.]

[Marks: 100]

Please check whether you have got the right question paper.

- N.B: 1. All questions are compulsory and carry equal marks.
2. Figures to the right indicate full marks.
3. Draw neat and labelled diagrams wherever necessary.
4. Answer the questions in proper order.

- Q. 1 Describe Any Two of the following: (20)**
a) Composition of plasma
b) Types of leucocytes and their functions
c) Mechanism of clotting of blood
- Q. 2 Explain Any Two of the following: (20)**
a) Liver Function tests
b) Microscopic Examination of blood for diagnosis of malaria
c) Scope of Applied Hematology
- Q. 3 Give an account on Any Two of the following: (20)**
a) Phagocytosis and inflammatory responses as a mechanism of second line of defense.
b) Thymus as a primary lymphoid organ
c) The basic structure of immunoglobulin
- Q. 4 Describe Any Two of the following: (20)**
a) Laurell's rocket electrophoresis and countercurrent immunoelectrophoresis
b) Adjuvants used for human vaccines
c) Immunological basis of graft rejection
- Q. 5 Write short notes on: (Any Four) (20)**
a) ESR
b) Hemorrhage
c) Hapten
d) Hemagglutination
e) Purpura
f) General features of antigen-antibody interactions:

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Q.1 Describe Any Two of the following: (20)

- Types of symmetry and their significance.
- Taxonomy and binomial nomenclature.
- Types of Coelom.

Q.2 Explain Any Two of the following: (20)

- General characters of Phylum Cnidaria and distinguishing features of Class Hydrozoa.
- General characters of Phylum Nematoda and description of *Ascaris*.
- Life history and Pathogenicity of *Fasciola hepatica*.

Q.3 Describe Any Two of the following: (20)

- An example from each class of phylum Echinodermata.
- General characters of Phylum Acanthocephala.
- Distinguishing features of class Pelecypoda and Scaphopoda with suitable example

Q.4 Describe Any Two of the following: (20)

- Nervous system of *Sepia*.
- External characters of *Sepia*.
- Reproductive system of *Sepia*.

Q.5 Write short notes on: (Any Four) (20)

- Cephalization and Cephalothorax
- Metamerism
- Euspongia*
- Nereis.
- Centipede.
- Locomotion and Economic importance of *Sepia*.

Sum 5

P.Y.BSc

Nov 2022

Zoology
Date: 24/11/2022

TYBSc. SEMESTER V APPLIED COMPONENT - FISHERY BIOLOGY
(Oceanography Aquaculture Practices, Marketing and Finance)

Time : 3:00 Hrs

Total Marks : 100

- Note:** (1) Attempt any four questions from Question No. 1 -7 (20 Marks each).
(2) Question No. 8 is compulsory.
(3) Draw and label the neat diagrams wherever necessary.

Q.1) Attempt any two from the following.

- A. Describe the various life saving devices. (10)
B. Explain in brief Niskin water sampler. (10)
C. Explain temperature and light as physical parameters of sea water. (10)

Q.2) Attempt any two from the following.

- A. Give an account of basic boat building parts. (10)
B. Explain the 4 stroke diesel engine. (10)
C. Explain purse seine net operation. (10)

Q.3) Attempt any two from the following.

- A. Describe various breeding techniques used in major carps. (10)
B. Explain hatchery management of exotic carps. (10)
C. Describe Semi intensive mono culture. (10)

Q.4) Attempt any two from the following.

- A. Describe the breeding techniques used in fresh water prawn. (10)
B. Describe the breeding and rearing of Guppy and sword tail. (10)
C. Explain the breeding and rearing techniques in *Pangasianodon hypophthalmus*. (10)

Q.5) Attempt any two from the following.

- A. Explain the rearing techniques in *Lates calcarifer*. (10)
B. Describe the extensive and intensive breeding practice in Pacific white shrimp. (10)
C. Explain the nursery management and rearing in *Scylla serrata*. (10)

Q.6) Attempt any two from the following.

- A. Describe organoleptic and microbial methods for evaluating freshness and quality of fish (10)
B. Explain the procedure of maintenance of hygiene of food contact surfaces, storage and equipment (10)
C. Quality policy and quality analysis in fish industry (10)

Q.7) Attempt any two from the following.

- A. Discuss traditional marketing. (10)
B. Explain the trade policies and prospects of fish export (10)
C. Discuss about MPEDA and write its functions. (10)

Q.8) Write short notes on any four from the following.

- a. Petersen's grab (05)
b. Light fishing (05)
c. Hatchery management of *Cyprinus carpio* (05)
d. Breeding of flower horn (05)
e. Rearing of Pearl (05)
f. Rigor mortis (05)
g. Costing (05)

Sem 5 14 BCE Zoology Nov 2022

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 4. Answer the questions in proper order.

Q. 1 Describe Any Two of the following: (20)

- a) Layers and cells of epidermis
- b) T.S. of stomach
- c) Transverse section of liver

Q. 2 Explain Any Two of the following: (20)

- a) History of toxicology.
- b) Snake venom
- c) Alternative methods in toxicology.

Q. 3 Give an account on Any Two of the following: (20)

- a) Coagulative and liquefactive necrosis
- b) Hypoxic cell injury
- c) Types of gangrene

Q. 4 Describe Any Two of the following: (20)

- a) Testing of hypothesis
- b) t-test
- c) Types of correlation

Q. 5 Write short notes on : (Any Four) (20)

- a) Mammalian sweat gland
- b) Honey bee sting
- c) Jaundice
- d) Addition law of probability
- e) Taste buds
- f) Characteristics of binomial distribution

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 4. Answer the questions in proper order.

Q. 1 Describe Any Two of the following: (20)

- a) Basic structure of integument with the help of diagram.
- b) Scales in fishes.
- c) Any two special derivatives of integument.

Q. 2 Explain Any Two of the following: (20)

- a) Bone structure its properties and functions.
- b) General characters of typical vertebra with suitable diagram.
- c) General skeleton of ribs and sternum.

Q. 3 Give an account on Any Two of the following: (20)

- a) Flexor carpal radialis
- b) Biceps brachii
- c) Tibialis anterior muscles and soleus muscles

Q. 4 Describe Any Two of the following: (20)

- a) 24 hours chick embryo
- b) Extra embryonic membranes of chick.
- c) Regional specificity of the organizer.

Q. 5 Write short notes on: (Any Four) (20)

- a) Salt glands
- b) Feathers in birds
- c) Hyoid bone
- d) Gastrulation in chick
- e) Claw
- f) Cell adhesion
