

[Time: 03 Hours.]

[Marks: 100]

- 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)

- Levels of organization
- Types of symmetry
- Six kingdom classification

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

- Distinguishing features of class Calcarea and Demospongiae with suitable example.
- General characters of phylum Cnidaria and distinguishing features of class Anthozoa.
- General characters of phylum Platyhelminthes and description of *Taenia solium*.

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

- Distinguishing features of class Hirudinea with reference to Leech
- General characters and classification of phylum Annelida
- Distinguishing features of class Ophiuroidea with reference to Brittle Star

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

- Respiratory system of *Sepia*
- Female Reproductive system of *Sepia*
- External characters and importance of Mantle cavity in *Sepia*

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

- Plasmodium
- Trichinia worm
- Millipede
- Habit and habitat of *Sepia*
- Cercaria larva
- Locomotion in *Sepia*

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

- a) Types of plasma proteins and their functions
- b) Mechanism of blood clotting
- c) Hemoglobin formation and degradation

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

- a) Liver Function tests (Any three)
- b) Microscopic Examination of blood for myeloma and lymphoma
- c) Purpura-Types and diagnosis

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

- a) The first line defense mechanism of innate immunity
- b) Lymph node as a secondary lymphoid organ
- c) The basic structure of Immunoglobulin

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

- a) Mancini and Ouchterlony methods of immunodiffusion
- b) Latex agglutination and Coombs test
- c) Classification of vaccines

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

- a) Functions of WBC
- b) Thalassemia and its diagnosis
- c) Hapten
- d) MHC compatibility in organ transplantation
- e) Forensic hematology
- f) Dendritic cells

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3. Draw neat and labelled diagrams wherever necessary.
4. Answer the questions in proper order.

- Q. 1 Describe Any Two of the following: (20)
- Layers of cell of Epidermis
 - T.S of small intestine
 - V.S. of tooth
- Q. 2 Explain Any Two of the following: (20)
- OECD guidelines for testing of chemicals
 - Hepatotoxicity.
 - Mycotoxin
- Q. 3 Give an account on Any Two of the following: (20)
- Causes and effects of jaundice
 - Cloudy swelling
 - Types of necrosis.
- Q. 4 Describe Any Two of the following: (20)
- Probability – Addition rule
 - Normal Distribution curve
 - Levels of significance and testing of hypothesis
- Q. 5 Write short notes on: (Any Four) (20)
- T.S. of Stomach
 - LC₅₀.
 - Chronic Toxicity.
 - Correlation coefficient
 - T.S. of Liver
 - Gas gangrene

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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) Scales in fishes
- b) Poison and uropygial gland.
- c) Epidermal derivatives Horn and Hoof.

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

- a) Structure, function and chemical composition of bone.
- b) Structure and function of hyoid bone.
- c) Bones of hind limb

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

- a) Triceps brachii
- b) Flexors and extensor muscles
- c) Soleus muscle

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

- a) 24 hours chick embryo.
- b) Spemann Mangold experiment
- c) Morphogenesis Movement.

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

- a) Wart in toad
- b) Common skeleton of rib
- c) Bicep brachii
- d) Cell adhesion
- e) Cervical vertebra
- f) Fertilization

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TS52303

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

Time: 3:00 Hrs

Total Marks : 100

- Note:** (1) Attempt any four questions from Question No. 1 to Question No. 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. With reference to navigational and sea safety equipments describe rudder and signalling devices. 10 Marks
 - B. Explain the working of echosounder. 10 Marks
 - C. Explain any two factors affecting marine environment. 10 Marks
- Q.2) Attempt any two from the following.
- A. Explain 2 – stroke and 4 – stroke diesel engines. 10 Marks
 - B. Give an account of borers their impact and control measures. 10 Marks
 - C. Explain the operation of purse seine net. 10 Marks
- Q.3) Attempt any two from the following.
- A. Explain breeding techniques in major carps. 10 Marks
 - B. Describe nursery management of common carp. 10 Marks
 - C. Write about semi – intensive monoculture in India. 10 Marks
- Q.4) Attempt any two from the following.
- A. Describe the breeding techniques used in fresh water prawn. 10 Marks
 - B. Describe breeding and rearing of guppy. 10 Marks
 - C. Explain the breeding and rearing of *Heteropneustes spp.* 10 Marks
- Q.5) Attempt any two from the following.
- A. Explain the semi – intensive hatchery management rearing practice of *Litopenaeus vannamei*. 10 Marks
 - B. Describe the semi - intensive and intensive breeding practice in Giant mud crab. 10 Marks
 - C. Describe the hatchery and nursery management of Pearl. 10 Marks
- Q.6) Attempt any two from the following.
- A. Discuss variations in the appearance, flavour, and texture of fish after death and discuss the organoleptic methods for determining the freshness and quality of fish. 10 Marks
 - B. Explain the procedure of freezing including hygienic washing, dressing. 10 Marks
 - C. Describe the various packaging materials used in the freezing and canning industries. 10 Marks
- Q.7) Attempt any two from the following.
- A. Explain the role of NABARD and criteria for refinance. 10 Marks
 - B. Discuss financial institution with respect to fishery. 10 Marks
 - C. Explain the accounting terms related to transactions. 10 Marks
- Q.8) Write short notes on any four of the following.
- A. Niskin water sampler 05 Marks
 - B. Remote sensing 05 Marks
 - C. Basic boat building parts 05 Marks
 - D. Electric fishing 05 Marks
 - E. Nursery management of *Labeo rohita* 05 Marks
 - F. Breeding of *Pterophyllum spp* 05 Marks
 - G. Nursery management of *Lates calcarifer* 05 Marks
 - H. Hyperaemia 05 Marks
 - I. Fish spoiling bacteria 05 Marks
 - J. Feasibility report 05 Marks
 - K. Traditional market 05 Marks