19/4/2023 TYBSc / Zoology / March-Apr 2023

[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) Characteristic features and classification of subphylum Urochordata with examples.
b) General characters and classification of subphylum Vertebrata with examples.
c) Classification and characteristics of *Cephalaspis* with neat labelled diagram.

Q. 2 Explain any two of the following: (20)

a) General characters and classification of superclass Pisces with examples.
b) Affinities of Dipnoi with super class Pisces, affinities and differences of Dipnoi with class Amphibia.
c) Classification and characteristics of *Amphiuma* with neat labelled diagram.

Q. 3 Give an account on any two of the following: (20)

a) General characters of class Aves with the description of a suitable example.
b) Characteristic features of class Reptilia with *Chelonia* as example.
c) Insect eating mammal and gnawing mammal.

Q. 4 Describe any two of the following: (20)

a) Habit, habitat, distribution and classification of *Scoliodon*.
b) Nervous system of *Scoliodon*.
c) Copulation, fertilization and development in *Scoliodon*.

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

a) *Rhinobatus* with labelled diagram
b) *Salpa* with labelled diagram
c) Differences between Agnatha and Gnathostomata with examples
d) *Chamaeleo*
e) *Funambulus*
f) Placoid scale of *Scoliodon* with labelled diagram

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[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)

a) Classification of enzymes based on Enzyme Commission.
b) Factors affecting enzyme activity.
c) Enzyme inhibition with reference to competitive inhibitor and its kinetics.

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

a) Non shivering thermogenesis.
b) Physiological adaptations in terrestrial animals with reference to osmoregulation.
c) Mechanisms of heat loss.

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

a) Mechanisms of hormone action.
b) The histological structure of thyroid gland, its hormones, and their functions.
c) Histological structure of Pancreas and its hormones.

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

a) Effect of temperature, pH and CO2 in cell culture.
b) Types of culture media.
c) Preparation of cells for tissue culture.

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

a) Isozymes.
b) Circadian rhythms.
c) Disorders of over secretion of growth hormone of Pituitary gland.
d) Parathormone.
e) Importance of sterility in cell culture.
f) Coverslip culture.

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TYBSc. SEMESTER V APPLIED COMPONENT - FISHERY BIOLOGY

TYST003 (Oceanography Aquaculture Practices, Marketing and Finance) 230427

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. Give an account of life saving devices. (10)
B. Explain various fish finding methods. (10)
C. Describe salinity and oxygen as chemical parameter of sea water. (10)

Q.2) Attempt any two from the following.
A. Give an account of various boat building design. (10)
B. Explain the outboard and inboard marine engines. (10)
C. Explain trawl net operation. (10)

Q.3) Attempt any two from the following.
A. Give an account of nursery management in farming of Indian major carps. (10)
B. Describe breeding techniques of common carps. (10)
C. Write about extensive polyculture in India. (10)

Q.4) Attempt any two from the following.
A. Describe the life cycle of *Macrobrachium rosenbergii*. (10)
B. Describe the breeding and rearing of Danio and Discus. (10)
C. Explain the rearing techniques in *Clarias* and *Anabas* Spp. (10)

Q.5) Attempt any two from the following.
A. Explain the extensive breeding techniques in *Lates calcarifer*. (10)
B. Describe the hatchery and nursery management in Brackish water prawn. (10)
C. Explain the semi-intensive and intensive breeding techniques in Giant mud crab. (10)

Q.6) Attempt any two from the following.
A. Describe organoleptic tests and chemical methods for evaluating freshness and quality of fish and prawn. (10)
B. Explain the procedure of freezing including hygienic washing and dressing. (10)
C. Explain Quality policy and quality analysis in fish industry. (10)

Q.7) Attempt any two from the following.
A. Explain fund raising with respect to fishery. (10)
B. Explain the role of NABARD (10)
C. Discuss costing and feasibility report with respect to fish marketing. (10)

Q.8) Write short notes on any four from the following.
a. Signalling devices (05)
b. Protection from borers (05)
c. Hatchery management of silver carp (05)
d Breeding of Tangerine (05)
e. Breeding of *Pinctada vulgaris* (05)
f. Can (05)
g. Functions of MPEDA (05)