B.N.Bandodkar College of Science, Thane

T.Y.B.Sc -Preliminary examination- Feb 2012

Zoology Paper I

Duration: 3Hrs **Total Marks: 100**

1. All questions are compulsory.
2. All questions carry equal marks.
3. Illustrate the answers with diagrams wherever necessary.

Q1. Write short notes on (any four)

a. Eye of Sepia.

b. Ink sac.

c. Hair.

d. Metanephros.

e. Haemochorial placenta.

f. T.S of mammalian liver.

Q2. Describe (any Two): -

a. Respiratory system of sepia
b. Nervous system of shark
c. Urinogenital system of shark

Q3.Write briefly on (any two): -

a. Digestive tube and its evolution in birds and mammals.
b. Gills of cartilaginous and bony fishes.
c. Aortic arches in fish and frog.

Q4. Explain (any two) : -

a. Gametogenesis.
b. Extraembryonic membrane
c. Cell differentiation and embryonic stem cells.

Q5. Describe (any two) of the following: -

a. Hormonal disorders of pituitary gland
b. Histology of pancreas.
c. Functions of thyroid hormones.

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Zoology Paper II

Duration: 3Hrs **Total Marks: 100**

1. All questions are compulsory.
2. All questions carry equal marks.
3. Illustrate the answers with diagrams wherever necessary.

Q1. Write short notes on (any four):- 20

1. Effect of temperature on enzyme activity.
2. Aestivation.
3. ECG
4. Leucopoiesis
5. Functions of Plasma proteins
6. Characteristics of precipitation reaction

Q2. Give an account of (any Two) 20

a) Catecholamines as neurotransmitters.

b) Competitive and non-competitive inhibition of enzymes.

c) Chemical structure of enzymes.

` Q3. Describe briefly (any two) 20

a) Heat production in animals.

b) Osmotic and ionic regulation while living in Hyposmotic environment.

c) Endocrine regulation of male reproductive system.

Q.4 Answer briefly (any Two)

a) ESR

b) Haemoglobin – structure and functions

c) Bleeding and clotting time

Q.5 Describe briefly (any two)

a) Radial immunodiffusion -Mancini method

b) IgM

c) Passively acquired immunity- Natural and artificial,

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Zoology Paper III

Duration: 3Hrs **T0tal Marks: 100**

1. All questions are compulsory.
2. All questions carry equal marks.
3. Illustrate the answers with diagrams wherever necessary.

Q1. Write short notes on (any four):-

a. Base analogue.
b. Excision repair mechanism.
c. DNA database.
d. Amino acid sequence divergence in proteins.
e. Food additives as source of toxic compound
f. Metabolism of carbon tetrachloride.

Q2.Explain (any two):-

a. Hershey-Chase experiment.
b. Semi discontinuous replication
c. Lac-Operon.

Q3.Describe (any two):-

a. Primary and established mammalian cell lines.
b. Southern blotting as a tool in DNA fingerprinting
c. Reverse transcription**.**

Q4.Discuss (any two):-

a. Karyotype preparation.
b. Non disjunction of sex chromosomes.
c. Human metabolic disease with reference to phenylketonuria.

Q5. Explain (any Two):-

a. Micotoxins and microbial toxins
b. Margin of safety and therapeutic index
c. Neurotoxicity.

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Zoology- Paper IV

Duration: 3Hrs **Total Marks: 100**

4. All questions are compulsory.
5. All questions carry equal marks.
6. Illustrate the answers with diagrams wherever necessary.

Q1. Write short notes on (Any four) 20

a) Bharatpur.
b) Frequency polygon.
c) Components of air and their significance
d) Swine flu
e) Kin selection
f) Biofuels.

Q2 Give an account of (Any two) 20

a) EIA studies.
b) Sustainable development.
c) Prospects of Hydel and Fossil fuel energy in India and alternatives to their depletion.

Q3. Describe briefly on (Any two) 20

a) Forest resources.
b) Palaerctic realm.
c) Homing and territoriality

Q4.Explain: (Any two) 20

a) Methods of disinfection.
b) National TB control programme.
c) Ascariasis and filariasis.

Q5. Write an account on (Any two) 20

a) Z test of significance.
b) Sampling techniques
c) Bar diagrams.

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T. Y. B.Sc. Preliminary Examination Feb 2012

Applied Component (Fishery Biology)

Paper-I

Duration: 3Hrs **T0tal Marks: 60**

1. Attempt any four questions..
2. All questions carry equal marks.
3. Illustrate the answers with diagrams wherever necessary.

Q1. Give an account on sea safety equipments.

Q2. Write short notes on

a. Four stroke diesel engine
b. Operation of purse seine net
c. Material used in boat building

Q3. Describe

a. Monoculture practices
b. Breeding technique of major carps

Q 4. Write details of breeding and rearing of ornamental fishes

Q5. Write short notes

a. Semi-intensive Rearing practices of Peaneus monodon
b. Breeding techniques of Peaneus monodon
c. Hatchery management in Peaneus monodon

Q6. Write an account on pearl culture (Pinctada vulgaris

Q7. Answer the following

a. Rigor mortis
b. Methods of evaluating freshness of fish

Q8. Describe the global marketing and export import procedures

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T. Y. B.Sc. Preliminary Examination Feb 2012

Applied Component (Fishery Biology)

Paper-II

Duration: 3Hrs **T0tal Marks: 60**

1. Attempt any four questions..
2. All questions carry equal marks.
3. Illustrate the answers with diagrams wherever necessary.

Q1. Write an account on fishery of Sarda orientalis.

Q2. Answer the following:

a. Fishery of Panulirus polyphagus
b. Fishery of Sepia pharaonis

Q3. Write short notes:

a. Artemia culture
b. Palleted feeds
c. Nutritional requirements at adult stage of fish

Q4. Write an account on fungal diseases in fish>

Q5. Describe:

a. Types of freezers with respect to fish preservation
b. B. Canning if fish and prawn

Q6. Write short notes:

a. Gelatin
b. Chitosan
c. Value added products of fish

Q7. Write an account on equipments and accessories used in various aqua farms.

Q8. Write short notes:

a. Sports fishery
b. Cage culture
c. Sewage fed fish culture.

Unit -4 Diversity of animal kigdom II

Short notes (4 marks each)

Starfish(Asteroidea)

Sea urchin(Echinoidea)

Brittle star- Ophuroidea

Sea cucumber – Holothuroidea

Sea lily – Crinoidea

Chiton –Amphineura

Dentalium - scaphopoda

Pila – Gastropoda

Sepia /loligo/ octopus – cephalopoda

Salient features- Mollusca / echinodermata

Balanoglossus – Hemichordata

Amphioxus – Cephalochordata

Ascidean / salpa/ doliolum/ urochordata

Petromyzon – Agnatha – cyclostomata

Gnathostomata

Salient feature of Pisces / Amphibia / Reptilia / Aves / mammals

Shark

Electric ray

Types of tailfin in fishes

Types of scales in fishes

Flying fish

Sciana

Frog / Toad / caecilian

Flying lizard / crocodile / turtle / tortoise / cobra / krait /chameleon

Duck / Kite / ostrich

Types of feathers / down / filoplumes / Quill

Types of toes in birds

Types of beak in birds

Air Sacs in birds

Bat / shrew / Kangaroo / egg laying mammal- duck billed platypus

For one mark

Names of scales / feathers/ examples from various classes / Larval forms of mollusc/ echinodermata/functions of tube feet/ water vascular system/radula/Aristotle lantern/

1. Irritability of paramecium
2. Structure of nerve cell - neuron
3. Synaptic transmission
4. Hormone as chemical messenger
5. Feedback mechanism
6. Osmoregulation in freshwater fishes
7. Osmoregulation marine bony fish
8. Osmoregulation in marine cartilaginous fish
9. Structure of bowman's capsule
10. Structure of nephron
11. Nephridium of earthwarm
12. Malphighian tubules in cockroach
13. Flame cells platyhelminthes
14. Structure of human eye
15. Structure of human ear
16. Resting potential
17. Conduction of nerve impulse
18. Action potential
19. Structure of mammalian sperm
20. Structure of mammalian ovum
21. Spermatogenesis
22. Oogenesis
23. Oviparity and viviparity
24. Oviparity and ovoviviparity
25. Viviparity and ovoviviparity
26. Invitrofertilization
27. Response of paramecium to chemical / mechanical /electrical /gravity and temperature
28. L.s. of kidney of mammal
29. Ureotelic animals, urecotelic animals and ammonotelic animals

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