Bidar University Bidar

Dept. of Zoology

B.Sc I Semester- DSC- 1Z
BIOLOGY OF NONCHORDATA : Theory (04 Credits)

Hrs-48

Unit-I

1. Intruduction: Principles of Animal Classification. Traditional & modern concept (Linneaen & Cladistic) Species concept.

12 Hours

2. Phylum-Protozoa :General characters & Classification upto class with Examples Locomotory organs & locomotion in Protozoa.
3. Phylum-Porifera: General Characters & classification up to classes with example canal & Skeleton system in Porifera,

Hours-12

Unit-II

4. Phylum-Coelenterata: General characters & Classification up to Classes with examples Structure & Life history of obelia, coral reefs, Types & Significance.
5. Phylum-Platyhelminthes: General Characters & Classification up to classes with examples Life Cycle of Taenia Solium. Parasitic adaptations in Platyhelminthes.
6. Phylum-Aschelminthes: General Characters. Host Parasitic relationship of Aschelminthes.

Hours-12

Unit-III

7. Phyum-Annelida: General Characters & Classification up to classes with examples. Metamerism in annelids Ecological adaptations in polychetes.
8. Phylum-Arthropoda: General Characters & Classification up to classes with examples. Arthropod pests and their management with relevnce to Sorghum, Paddy Sugar cane & Pigeonpea.

Hours-12

Unit-IV

9. Phylum-Mollusca : General Characters & Classification up to classes with examples, pearl culture & Economic improtance of Mollusks.
10. Phylum-Echinodermata: General Characters & Classification up to classes with examples. water vascular system in Asteroidea ,larval forms in Echinoderms.

B.Sc I Semester

Theory Exam Model Question Paper;

Instruction to the candidates.

1. Answer all Sections 2. Draw diagram wherever necessary

NOTE

1. Compulsory 3 Questions from each Unit (2 Marks)
2. Compulsory 1 Question$ from each Unit (5 Marks)
3. Compulsory 1 Question$ from each Unit (10 Marks)

Section- A 2 X 10 = 20

Any Ten

1.
2.
3.
4.
5.
6.
7.
8.
9.
10.
11.
12.

Section-B

Answer any four of the following 5 X 4 = 20

13.
14.
15.
16.
17.
18.

Section-C

Answer any four of the following in details 10 X 4 = 40

19.
20.
21.
22.
23.
24.

PRACTICAL (02 Credits)
BASED ON SEMESTER-I PAPER DSC -1Z : BIOLOGY OF NONCHORDATA

A- (A) Museum specimens and Slides:

Commonly available specimens cited in the list of examples for theory are to be selected.

Protozoa : Ameoba, Entamoeba hisolytica, Polystomella (any two)

Noctiluca, Euglena, and Trypanosoma (Any two)

Opalina, Plasmodium .

Vorticella, Paramecium

Porifera: Leucosolenia/Sycon.

Hyalonemma/Euplectella

Spongilla/Bath sponge

Coelenterata

Hydra, Obela (Obelia) Physala (Physalia) Porpita

Aurélla (Aurelia).

Pernatula (Pennatula) Gorgonium, Metridium, (Any two)

Platyhelminthes Planarea (Planaria)

Fasciola hepatica, Miračidium, Cercaria,

Metacercaria (Any two)

Taana (Taenia) solium/Echinococcus

Aschelminthes.

Nemathelminthes: Ascaris lumbricoides, Anchylostoma duodenale, Wuchereria bancroft, Enterobius vermicularis, Dracunculus medinensis. (Any tow)

Annelids

Pertima. pheretima

Nereis, Sabella, Terebella, and Chaetopterus. (Any two)

Hirudinaria.

Arthropods: Peripatus
a b

Penaeus, Balanus, Cancer, (Amy two), Scolopendra, Scutigera. Buthus, Limulus, Lepisma, Blatta orientalis, Termite, Honeybee, Butter flies, Moth·Vectors- Anopheles culicifacies (Malaria mosquito), Anopheles stephensi (Malaria mosquito), Ades aegypti (Dengue Mosquito). (Any two) Pest Insects: Any two pests of local crops. Wasps. Spiders..

Mollusca: Chiton, Scaphopoda Dentalum. Dentalium.

a) Marine: Patella, b) Non- marine: Ariophanta.

a) Marine: Mytilus, b) Non-marine: Lamellidens, Unio, Sepia, Nautilus, Octopus, and Loligo. (Any two)

Echinodermata

Asterias, Ophiothrix, Echinus, Holothuria, Crinoidea, Antedon,

B. Dissections

Virtual/ Cultured specimens.

1. **Dissection of Earthworm:** Digestive system, Nervous system.
2. **Cockroach:** Digestive system, Nervous system, Reproductive system.

Dissection

2. Mounting of Setae, Ovary, Spermatheca, Salivvary glands,

3. Certified Record Book
4. Submission of Animal Album (Locally Available Species)

B.Sc I Semester
FORMAT OF QUESTION PAPER FOR

PRACTICAL Z-P.1: BIOLOGY OF NONCHORDATA

Maximum Marks: 40

Q.1. Museum specimens and slides → Numbers 09 x 2 Marks = 18

Q.2. Dissection 08

Q.3. Mounting 04

Q.4. Record Book (Certified Record Book) 05

05. Submission of Animal Album 05

Dept. of Zoology

B.Sc II Semester- DSC- 2Z

BIOLOGY OF CHORDATA : Theory (04 Credits) **Hrs-48**

Unit-I 12 Hrs

1. Introduction;- Origin & Theories of Chordates. Basic Characters & Classification of Chordates up to classes with examples
2. General Characters of Hemichordata, Urochordata, cephalochordata with examples, Retrogressive metamorphosis in urochordata. systematic position of ~~hemichordata~~.
3. Agnatha: General Characters & Classification of agnatha up to classes with examples, salient features of ~~Cyclostomata~~ Chondrichthyes & Ostracodermi with orders & Examples.

UNIT-II 12 Hrs

4. General Characters of vertebrata and an outline classification (up to Classes)
5. Pisces: General characters & classification of chondrichthyes & osteichthyes. Osmoregulation in ~~Pisces~~ Fishes.

UNIT-III 12 Hrs

6. Amphibia: General characters & classification up to orders with examples, Metamorphosis, distribution & ecology of local amphibians (Ichthyophis , Rana, Bufo)
7. Reptilia: General Charaesres & Classification up to order ~~with examples~~ (Living orders only) with Suitable examples. Identification of poisonous & ~~Non~~ Non Poisonous Snakes, Poison apparatus (Indian Snakes) apparatus.

UNIT-IV 12 Hrs

8. Aves: - General Characters & Classification up to orders. Distinctive features of Archaeornithes and neornithes. Adaptation to flight.
9. Mammalia: Origin of Mammals. General Characters & classification up to Subclasses. Distinctive features of Prototheria and metatheria with important examples. Eutherian mammals important characters & distribution of Rodentia, carnivore, chiroptera, perissodactyla, Artiodactyla, cetacea & Primates, Study of Rat Morphology and anatomy (Male & Female Urinogenital System) only

B.Sc II Semester

Theory Exam Model Question Paper;

Instruction to the candidates.

1. Answer all Sections 2. Draw diagram wherever necessary

NOTE

4. Compulsory 3 Questions from each Unit (2 Marks)
5. Compulsory 1 Questions from each Unit (5 Marks)
6. Compulsory 1 Questions from each Unit (10 Marks)

Section- A 2 X 10 = 20

Any Ten

18. 1
19. 2
20. 3
21. 4
22. 5
23. 6
24. 7
25. 8
26. 9
27. 10
28. 11
29. 12

Section-B

Answer any four of the following 5 X 4 = 20

30. 13
31. 14
32. 15
33. 16
34. 17
18. 18

Section-C

Answer any four of the following in details 10 X 4 = 40

19. 19
20. 20
21. 21
22. 22
23. 23
24. 24

PRACTICAL ZP-2

BASED ON PAPER DSC 2Z: BIOLOGY OF CHORDATA

1. Hemichordata, Cephalochordata & Urochordata:

Hemichordata: Balanoglossus

Urochordata: Dolplum (Herdmania)

Cephalochordata: Amphioxus

Cyclostomata: Petromyzon/Myxine

Marine Fishes: Chondrichthyes-Scoliodon, Rhyncobatus, Torpedo, Pristis, Sting Ray, Hammer head Shark (Any two)

Osteichthyes-Notopterus, Anguilla, Exocoetus, Hippocampus, Labimaria, Protopterus, Lepidosiren, Neoceratodus

Freshwater fishes: Channa marulius, Gambusia affinis, Labeo rohita, Mystus vittatus, Wallago act.

Amphibians:

Apoda: Ichthyophis (Caecilian)

Anura: Bufo melanostictus (Common toad), Rana cyanophlyctis (Skipper Frog)

OR Rana Tigrina (Indian Bull Frog)(Any one) Polypedates maculates (Indian Tree Frog) Urodela: Ambystoma, Axolotle larva

Reptile: Lacertilia: Hemidactylus brooki (Brook's Gecko), Mabuya carinata (Common skink) Ophidia: Naja naja (Indian Cobra), Vipera russelli (Russell's Viper), Sea Snake, Rat snake, Chelonia: Turtle/Tortois

Crocodilla: Crocodylus palustris (Mugger)

Aves: Coracina novachollandiae (Indian Large Cuckoo-Shrike), Metopidus indicus (Bronzawinged Jacana), Tockus birostris (Common Grey Hornbill) Hemicircus Callente (Heartspotted Woodpecker) Passer domesticus (House Sparrow) Alcedo atthis (Small Blue Kingfisher) Athene brama (Spotted Owlet) Hawk, Parrot, Sarkidiomis melanotos (Comb Duck)

Mammalia

Echidna, Lepus nigricollis (Black naped hare), Suncus murinus (House Shrew), Pteropus giganteus (Indian Flying Fax), Cynopterus sphinx (Short nosed fruit bat), Funambulus palmarum (three striped palm squirrel) Handicota Indica (Bandicoot), Herpestus edwardsi (Common mongoose) Pangolin.

* Not found in India but has to be cited as example because of taxonomic/ phylogenetic

* or of other special significance

Dissection * Virtual/cultured Specimen: ① Shark: Afferent & Efferent brachial System, Glassopharyngeal & Vagus nerve.

② Rat: Urinogenital System

*c) Field Oriented Project:

1. Visit to nearby garden/ crop/ an/ grassland/ krest lend/ ~~me stran~~ sanctuaries/ national park to study the anal diversity.

2. Bird watching and preparation of ~~stoffcologe eampa~~

3. Identification of local editie futes

4. Listing and kenttfying kcal butterflos and preparation of ~~chest of tafs if~~ of college campus identifying local

5. Listing and kentifying common spiders.

6. Listing and identifying temestrul and freshwater mollaks in the sundings of college/ Village.

PRACTICAL ZP-I

FORMAT OF QUESTION PAPER FOR

PRACTICAL Z-P-2: BIOLOGY OF CHORDATA

Maximum Marks 40

1. Dissect & display shark/Rat ---------- 10

3. Museum specimens and slides ---------- 4 10 X 1/2=20

4. Submission of fieldwork report 05

5. Certified Record Book 05