



UNIVERSITY OF THE PUNJAB

First Semester 2015
Examination: B.S. 4 Years Programme

Roll No.

PAPER: Zoology-I (Invertebrate Diversity)
Course Code: ZOOL-101 /

TIME ALLOWED: 2 hrs. & 30 mins.
MAX. MARKS: 50

Attempt this Paper on Separate Answer Sheet provided.

(Short Questions)

Question No 2: Write short answer of the following questions

(2X10=20)

- I. How do arthropods grow?
- II. What is the difference between diploblastic and triploblastic organization?
- III. What is Metamerism and Tagmatization?
- IV. Define Crossing over and Linkage?
- V. What is the type of digestion that occurs in cnidarians?
- VI. What is Eutely? What is its significance?
- VII. How does Tapeworm obtain Nutrition?
- VIII. What are the main morphological features of arthropods?
- IX. What is Multiple Alleles?
- X. How can the excretory system of annelids be described?

(Long Questions)

Question No 3. Explain the following questions?

(10X3=30)

- I. Write a note on Phylum Annelida? (10)
- II. What is Population Genetics? Explain about the Natural Selection. (10)
- III. How would you describe the following kinds of Chromosomes Rearrangements?
 - a) i. Translocation ii. Inversion iii. Deletion (6)
 - b) What is Induced Mutation?



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MAX. MARKS: 10

Attempt this Paper on this Question Sheet only.

(OBJECTIVE)

MCQ's

(10X1=10)

Q No. 1: Choose the correct option for the statements from the multiple choices given below.

I. The first Invertebrate to develop a true Nervous System

- | | |
|------------------|-------------|
| A. Flat worms | B. Sponges |
| C. Coelenterates | D. Annelids |

II. Gemmules are formed for

- | | |
|-------------------------|------------------------|
| A. Asexual Reproduction | B. Sexual Reproduction |
| C. Body growth | D. Digestion |

III. Name the fresh water sponge

- | | |
|----------------|--------------|
| A. Spongia | B. Sycon |
| C. Euplectella | D. Spongilla |

IV. Sepia is commonly known as

- | | |
|----------------|----------------|
| a. Star fish | b. Jelly fish |
| c. cuttle fish | d. Silver fish |

V. Most Protozoologist now are regard the Protozoa as a Sub-kingdom consisting of

- | | |
|-------------|------------|
| a. 5 Phyla | b. 7 Phyla |
| c. 10 Phyla | d. 8 |
- Phyla

VI. The mode of respiration in earthworm is

- | | |
|--------------|-----------------|
| A. Cutaneous | B. gills |
| C. Pulmonary | D. Subcutaneous |

VII. Lung books are the respiratory organs of

- | | |
|--------------|----------------|
| A. Insects | B. Crustaceans |
| C. Arachnids | D. Peripatus |

VIII. In determining the phenotype for the ABO blood system:

- | | |
|-------------------------|-------------------------|
| A. O is dominant over A | B. B is dominant over A |
| C. O is recessive | D. All of the above |

IX. Which of the following is called Blood fluke of man?

- | | |
|-------------|----------------|
| A. Taenia | B. Paragonium |
| C. Fasciola | D. Schistosoma |

X. Name the primary host for the lifecycle of *Taenia solium*

- | | |
|----------|---------|
| A. Man | B. Goat |
| C. Snail | D. Pig |



UNIVERSITY OF THE PUNJAB

Roll No.

Second Semester 2015
Examination: B.S. 4 Years Programme

PAPER: Zoology-II (Chordate Diversity)
Course Code: ZOOL-103,

TIME ALLOWED: 30 mins.
MAX. MARKS: 10

Attempt this Paper on this Question Sheet only.

Q1: Multiple choice questions: Four possible answers to each statement have been given below. Encircle the correct answer. Cutting, erasing and overwriting is strictly prohibited: (10)

- I. The larva that occurs in the development of Sea Urchin is
 - a. Auricularia
 - b. Echinopluteus
 - c. Bipinnaria
 - d. Pluteus
- II. Sharks belongs to:
 - a. Class Myxini
 - b. Chondrichthyes
 - c. Osteichthyes
 - d. Amphibia
- III. Structure which remains unchanged during metamorphosis of Frog's tadpole is
 - a. Heart
 - b. Lungs
 - c. Intestine
 - d. Nervous System
- IV. Swarming generally occurs in
 - a. Pyrilla
 - b. Mosquito
 - c. House fly
 - d. Locust
- V. Sea Stars belong to Class
 - a. Asteroidea
 - b. Ophiuroidea
 - c. Echinoidea
 - d. Crinoidea
- VI. *Nasika batrachus saliyadreis* is a/an
 - a. Amphibian
 - b. Mammals
 - c. Birds
 - d. Reptiles
- VII. Golden age of Reptiles
 - a. Cenozoic era
 - b. Archaeozoic era
 - c. Mesozoic era
 - d. Paleozoic era
- VIII. Glands are absent in the skin of _____.
 - a. Reptiles
 - b. Frogs
 - c. Mammals
 - d. None of above
- IX. Which is the World's largest Fish?
 - a. *Cetorhinus maximus*
 - b. *Rhincodon typus*
 - c. *Trimmatom nanus*
 - d. *Orcinus Orca*
- X. In Birds, Frequently the male is more _____ than the female.
 - a. Colorful
 - b. drab
 - c. All of above
 - d. None of above



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PAPER: Zoology-II (Chordate Diversity)
Course Code: ZOOL-103,

TIME ALLOWED: 2 hrs. & 30 mins.
MAX. MARKS: 50

Attempt this Paper on Separate Answer Sheet provided.

Question No 2. Shortly answer the following questions. (2X10=20)

- I. What are the features of Phylum Hemichordata?
- II. What is the difference between carapace and plastron?
- III. What are the three structures that characterize the group shared by every Chordate?
- IV. What is paedomorphosis?
- V. Which is the oldest class of fish?
- VI. What is placenta in Mammals and what are its functions?
- VII. Describe three characteristics of Echinoderms?
- VIII. Give any two flight adaptations in Birds?
- IX. Define Thecodont?
- X. Under which environments do Echinoderms live?

Question No 3. Explain the following questions? (10x3=30)

- I. Explain the salient features of phylum Echinodermata. Classify the phylum up to class giving diagnostic characters of each class and one example each.
- II. Write a note on bony fishes with examples?
- III. How many orders of amphibians? Describe each order in detail?



UNIVERSITY OF THE PUNJAB

Third Semester 2015
Examination: B.S. 4 Years Programme

Roll No.

PAPER: Zoology-III (Biochemistry)

TIME ALLOWED: 2 hrs. & 30 mins.

Course Code: ZOOL-201/

MAX. MARKS: 50

Attempt this Paper on Separate Answer Sheet provided.

SUBJECTIVE

Question No 2.

Shortly answer the following questions.

(2x10=20)

- I. Describe properties of IgA?
- II. What are Homeotherms and Hetrotherms?
- III. Fauna of Tundra Ecosystem?
- IV. What is the role of Fire in an Ecosystem?
- V. What is Genetic Drift?
- VI. Write three major functions of Carbohydrates?
- VII. How pH and Temperature effect the Enzyme Activity?
- VIII. What are the functions of IgG?
- IX. Write the two Paleontological Evidences about Evolution?
- X. What is the Selection Pressure?

Question No 3.

Explain the following questions in detail?

(10x3=30)

- I. Discuss about types of Polysaccharides and their functions? (10)
- II. Explain the Population Dynamics? (10)
- III. Write a detail note on Lipids and their function? (10)



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Roll No.

Third Semester 2015
Examination: B.S. 4 Years Programme

PAPER: Zoology-III (Biochemistry)
Course Code: ZOOL-201

TIME ALLOWED: 30 mins.
MAX. MARKS: 10

Attempt this Paper on this Question Sheet only.

OBJECTIVE

Q. No. 1. Multiple choice questions: Four possible answers to each statement have been given below. Encircle the correct answer. Cutting, erasing and overwriting is strictly prohibited:

1. Charles Elton described the concept of _____ as: The Carnivore animals prey upon the Herbivores.

- A. Food Web
- B. Food Chain
- C. Ecosystem
- D. Community

2. Many Fats develop an unpleasant odor and taste when they are allowed to contact with air at room Temperature is called _____.

- A. Acidity
- B. Basicity
- C. Rancidity
- D. None of above

3. Which of the following Monosaccharides is not a Carboxylic Acid?

- A. Glucose
- B. 6-Phospho-gluconate
- C. Gluconate
- D. Gluconate

4. In which condition Gene Ratio remains constant in a Species?

- A. Gene Flow
- B. Mutation
- C. Random Mating
- D. Sexual Selection

5. Which of the following statements are true regarding Enzyme Inhibition?

- A. It may be reversible or Irreversible
- B. Reversible can be Competitive or Non- competitive
- C. Both A and B
- D. It is always Reversible

(P.T.O.)

6. The most common Monomer of Carbohydrate is

- A. Glucose
- B. Nucleotides
- C. Amino acids
- D. Maltose

7. A Lipid is formed by the Condensation Reactions between

- A. Carbon and Hydrogen
- B. Fatty acid and Alcohol
- C. Fatty acid and Amino acids
- D. All of these

8. The Rate-Determining step of Michaelis Menten kinetics is

- A. The Complex Formation step
- B. The Complex Dissociation step to produce Product
- C. The Product Formation step
- D. Both A and C

9. Fishes in a Pond Ecosystem occupy which level?

- A. Primary Consumer
- B. Secondary Consumer
- C. Tertiary Consumer
- D. All of above

10. The known function of _____ the first Antibodies produced during an infection which is effective against Microbes and Agglutinating Antigens.

- a. IgA
- b. IgD
- c. IgG
- d. IgM



UNIVERSITY OF THE PUNJAB

Roll No.

Fourth Semester 2015
Examination: B.S. 4 Years Programme

PAPER: Zoology-IV (Physiology)
Course Code: ZOOL-203 /

TIME ALLOWED: 30 mins.
MAX. MARKS: 10

Attempt this Paper on this Question Sheet only.

Objective Type

QNo.1:- Choose the correct option for the statement from the options given below (10X1=10)

- I. Most primitive nervous system is found in
 - a) Hyrda
 - b) Amoeba
 - c) Sponge
 - d) Earthworm
- II. Chemically Hormones are
 - a) Carbohydrate
 - b) Protein
 - c) Steroids
 - d) Calcitonin
- III. No. of spinal nerves, present in frog are:
 - a) 8 pairs
 - b) 10 pairs
 - c) 12 pairs
 - d) 31 pairs
- IV. Parietal eye is only found in some:
 - a) Amphibians
 - b) Reptiles
 - c) Birds
 - d) Mammals
- V. Georeceptors gives an animals information about its orientation relative to
 - a) up and down
 - b) right and left
 - c) front and back
 - d) space and air
- VI. Pacinian Corpuscles and the organ of Ruffini are receptors for
 - a) Touch and pressure
 - b) Touch and smell
 - c) Touch and sight
 - d) Touch and hear
- VII. Which one of the following organelles contains small circular DNA?
 - a) Endoplasmic reticulum
 - b) Mitochondria
 - c) Lysosomes
 - d) Golgi apparatus
- VIII. The prolactin along with estrogen stimulates full development of -----
 - a) Feathers
 - b) Brood Patch
 - c) Beak
 - d) None of a, b, c
- IX. In insects the Hemolymph pressure assists in -----
 - a) Blood Sucking
 - b) Molting of old cuticle
 - b) Skin Coloration
 - d) Breeding behavior
- X. The pea-sized glands is called-----
 - a) Adrenal Gland
 - b) Parathyroid Gland
 - c) Thyroid Gland
 - d) Prolactin



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Fourth Semester 2015

Examination: B.S. 4 Years Programme

Roll No.

PAPER: Zoology-IV (Physiology)

TIME ALLOWED: 2 hrs. & 30 mins.

Course Code: ZOOL-203 /

MAX. MARKS: 50

Attempt this Paper on Separate Answer Sheet provided.

Subjective Type

Q.No.2: Write Short Answer of the Following Questions (2X10=20)

- i. Give the role of hygroreceptors. Give their locations in insects?
- ii. What are skin sensors of damaging stimuli?
- iii. What is the structure and function of micro-tubules?
- iv. Give location and role of Ultimobranchial glands?
- v. What is Significance of Mitochondria as semi- autonomous body?
- vi. What is autonomic nervous system?
- vii. Briefly describe breathing in birds.
- viii. Describe the function of lipids.
- ix. What is tonicity? Give its different from.
- x. Write down the name of any two cranial nerves and their function.

Q.No. 3: Question with brief answers. (30)

- i. Describe the structure and function of hormones in Molluscs, Annelids, Arthropods and Echinoderms. (10)
- ii. Write in detail the structure and function of Lysozomes and Peroxisomes.(10)
- iii. Explain the followings
 - a. Describe different transport systems of different invertebrates (5)
 - b. What is the function of small intestine in mammals? (5)