Subjective Part: Time Allowed: 02:30 Hours Maximum Marks: 20

Note: Answer the question of Part II & Part III on separate Answer sheet provided

Part-II

Answer any three of the following: 4+4+4=12

Q.3: What is an electrolyte, an acid, a base, ad buffers? What is the relationship between pH and H+ ion concentration?


Q.5: Differentiate between Spematogenesis and Oogenesis.

Q.6: Why is DNA replication semi-conservative and describe the functions of DNA polymerase?

Q.7: Why gene flow and mutation important to evolution?

Q.8: Write a note on molecular evolution.

Part-III

Attempt one of the following: (8)


Q.10: What are the various categories of learning? Give an example of each type. (8)
**Model Paper**

Government College University, Faisalabad

**B.Sc (Part-I)**

Subject: Zoology

**Paper: (A)**

Course Title: Principle in Animal Life

**Course Code: ZOO-301**

**Objective Part:**

| Time Allowed: 30 mints | Maximum Marks: 15 |

Note: Cutting and overwriting are not allowed in Objective part

1) In part 1 all question are compulsory. Answer these questions on the question sheet only.
2) Answer any three question from part-II any one question from part-III
3) Answer the questions of part-II and part-III on separate answer sheet provided

Q.1: Make TRUE of FALSE statement. Give correct statement if it is false:  1x5=5

<table>
<thead>
<tr>
<th>Statement</th>
<th>True/False</th>
<th>Correct Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Mammals like reptiles were common during Carboniferuos period.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Pseudoscience is the representation of ideas or beliefs as scientific without scientific basis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. Flagella may have arisen through the invagination of prokaryotes similar to spiral shaped bacteria called spirochetes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. The scanning electronic microscope (SEM) is used to study surfaces rather than thick sections of the cells.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>e. During Krebs cycled 8 NADH molecules as reproduced.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q.2: Tick the correct option from the MCQ given below:  1x10=10

1. Which of the following zoogeographical region does “ Sahara desert: belong to
   (i) Neotropical (ii) Neartic (iii) Ethiopian (iv) Oriental
2. Hyracotherium (Eohippus) was a dog sized animal with four prominent toes on each foot, was evolved during which epoch?
   (i) Oligocene (ii) Eocene (iii) Miocene (iv) Pliocene
3. Which hormone in mammals is responsible for the development and maintenance of secondary sexual characteristics?
   (i) Aldosterone (ii) Testosterone (iii) both of these (iv) None of these
4. Compounds with the same molecular formula but different structures are
5. Asiatic black bear (Ursus thibatanus) is present in Asia but now endangered due to
   (i) Over collection of medicines  (ii) Over population for pet markets  (iii) Habitat loss
   and poaching  (iv) none of these
6. The white blood cells of a grog engulf and digest harmful bacteria is an example of
   (i) Exocytosis  (ii) Phagocytosis  (iii) Pinocytosis  (iv) None of these
7. Axonemes of microtubules consist of pair of microtubules
   (i) 7  (ii) 8  (iii) 9  (iv) 10
8. How many number of alleles are now appears to delemine Rh phenotype?
   (i) 10  (ii) 20  (iii) 30  (iv) 40
9. Dinosaurs replaced mammal-like reptiles and the first true mammals appeared during
   ____________________ period of Mesozoic Era.
   a) Quaternary  b) Tertiary  c) Jurassic  d) Triassic
10. ________ are evidence of plants and animals that existed in the past and have become
    incorporated into the earth’s crust
    a) Fossil  b) Leftover  c) Sediments  d) Scavenger
B.Sc (Part-I)  

Subject: Zoology  

Paper: (B)  

Course Code: ZOO-302  

Course Title: Invertebrates Diversity (Classification, phylogeny and Organization)  

Objective Part: Time Allowed: 30 mints  
Maximum Marks: 15  

Note: Attempt Part-I on the question sheet and part-ii on answer sheet provided. 

Important Note: Attempt this part in the given time of 1 hour and hand over to center superintendent. Who will provide answer sheet for part-II  

Part-I  

Q.1: Tick the correct option form the MCQ given below: 1x10=10  

1. Liver fluke is found in the:  
   (a) intestine of human  (b) Liver and bile duct of man (c) Liver and bile duct of sheep (d) Intestine of sheep  

2. Ciliated larvae of monogeneans are called:  
   (a) Trochophore larva  (b) onconiracidium  (c) Muller’s larva  (d) Mircidium  

3. The Rotifers derives their name from the characteristics ciliated organ:  
   (a) Lorica  (b) Corona  (c) Mastax  (d) All of these  

4. The scientific name of common pin worn is :  
   (a) Ascaris  (b) Enterobius vermicularis  (c) w.banerofti  (d) trichinellasprialis  

5. Leeches belong to class:  
   (a) Mongogenea  (b) Polychaeta  (c) Oligochaeta  (d) Hirudinea  

6. Earth worms are  
   (a) Monoecious  (b) dioecious  (c) Asexual  (d) Parasites  

7. Scorpion is the member of sub-phylum:  
   (a) Chelicerata  (b) Crustacea  (c) Uniramia  (d) Merostomata  

8. Mating of spiders involves complex behaviours that include:  
   (a) Chemical signals  (b) visual signals  (c) Tactile signals  (d) All of these  

9. _________ are evidence of plants and animals that existed in the past and have become incorporated into the earth’s crust  
   (a) Fossil  (b) Leftover  (c) Sediments  (d) Scavenger  

10. Structures and processes that are derived from a common ancestor are said to be  
    (a) Analogous  (b) Homologous  (c) Convergent  (d) Divergent
Q.2: (a) Assign larvae of the following animals/groups.

1. Sponges__________________________
2. Bivalves (mussels)______________________
3. Anurans__________________________
4. Snails____________________________
5. Starfish___________________________

(b) Assign respiratory structures to the following animals.

1. Hibernating frog_______________________
2. Eel_______________________________
3. Sparrow___________________________
4. Spider____________________________
5. Leech_____________________________
Note: Answer the questions of Part-II on separate answer sheet provided.

Part-II

Q.3 Give brief answer to any ten of the following questions. 1x10=10

1. What are three kinds of a sexual reproduction in protozoa?
2. Give various stages in the life cycle of plasmodium?
3. What are the characteristics of protostomes?
4. Give two salient features of class hirudinea.
5. Define swim bladder, give its functions.
6. What do you know about pheromones?
7. Differentiate percocial and altricial birds.
8. How insects molts?
9. What are nematocysts? Give their functions.
10. enlist the chambers present in frog’s heart.
11. what do you know about respiratory tree?
12. Why is the uric acid an adaptive excretory product for insects?
13. What is aestivation?
14. Name any three symbiotic life styles.
15. What do you know about echolocation?

Q.4: Describe canal system in porifera. 5

or

State parasitic adaptations in Platyhelminthes. 5

Q.5 Characterize class osteichthyes. 5

or

Discuss glands in mammals. 5
Government College University, Faisalabad

B.Sc (Part-II)                  Annual 2017
Subject: Zoology                        Paper: (A)
Course Title: Chordates, Diversity (Classification, phylogeny and Organization)

Objective Part:                Time Allowed: 30 mints               Maximum Marks: 15

Note: Attempt Part-I on the question sheet and part-ii on answer sheet provided.

Important Note: Attempt this part in the given time of 1 hour and hand over to center superintendent.
Who will provide answer sheet for part-II

Part-I

Q.1: Tick the correct option form the MCQ given below: 1x10=10

1. Liver fluke is found in the:
   (a) intestine of human   (b) Liver and bile duct of man (c) Liver and bile duct of sheep (d) Intestine of sheep

2. Ciliated larvae of monogeneans are called:
   (a) Trochophore larva    (b) onconiracidium    (c) Muller’s larva    (d) Mircidium

3. The Rotifers derives their name from the characteristics ciliated organ:
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4. The scientific name of common pin worm is :
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5. Leeches belong to class:
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6. Earth worms are
   (a) Monoecious    (b) dioecious    (c) Asexual    (d) Parasites

7. Scorpians is the member of sub-phylum:
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8. Mating of spiders involves complex behaviours that include:
   (a) Chemical signals    (b) visual signals    (c) Tactile signals    (d) All of these

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2. Bivalves (mussels)_________________________  
3. Anurans__________________________  
4. Snails__________________________  
5. Starfish_______________________________  
(b) Assign respiratory structures to the following animals.  
1. Hibernating frog__________________________  
2. Eel__________________________  
3. Sparrow__________________________  
4. Spider__________________________  
5. Leech__________________________
Model Paper
Government College University, Faisalabad

B.Sc (Part-II) 

Subject: Zoology  

Paper: (A)  

Course Title: Chordates, Diversity (Classification, phylogeny and Organization)  

Course Code: ZOO-401  

Annual 2017  

Subjective Part:  

Time Allowed: 02:30 Hours  

Maximum Marks: 20  

Note: Answer the questions of Part-II on separate answer sheet provided.

Part-II

Q.3 Give brief answer to any ten of the following questions. 1x10=10

1. What are three kinds of a sexual reproduction in protozoa?

2. Give various stages in the life cycle of plasmodium?

3. What are the characteristics of protostomes?

4. Give two salient features of class hirudinea.

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14. Name any three symbiotic life styles.

15. What do you know about echolocation?

Q.4: Describe canal system in porifera.  

Or  

State parasitic adaptations in Platyhelminthes.  

Q.5: Characterize class osteichthyes.  

Or  

Discuss glands in mammals.
B.Sc (Part-II)  
Subject: Zoology  
Course Title: Animal Form and Function (A Comparative Perspective)  

Objective Part:  
Time Allowed: 30 mints  
Maximum Marks: 15

Note: Cutting and overwriting are not allowed in Objective part

1) In this part all question are compulsory. Answer these questions on the question sheet only.
2) Answer any three question from part-II any one question from part-III
3) While attempting part II and Part III. Write the same Question No. Which is on question paper

Importance Note: Attempt this part is the given time of 1 hour and hand over ot the superintendent. Who will provide you Answer sheet for part-II and Part-III

Part-I

Q.1: Multiple choice questions. Ticks mark the right answer. (10)

1. Tissues found in our body are derived from
   (a) Embryonic ectoderm  (b) Embryonic endoderm  (c) Embryonic mesoderm  (d) All of these

2. In taxidermy the skin is
   (a) Classified  (b) Preserved with help of chemicals  (c) Diseased  (d) Used in classification of animals

3. The important properties of neurons are
   (a) Excitability  (b) Conductivity  (c) Both a and b  (d) None of these

4. The electrical potential that exists across a cell membrane is
   (a) Resting memnetrice potential  (b) Active memnetrice potential
   (c) Automatic potential  (d) None of these

5. Receptors are the organs that carry/control
   (a) Impulses from brain to effector organs  (b) Impulses from environment to brain
   (c) Control the environmental conditions for animal  (d) none of the above functions

6. A chemical that acts on nearby cells is called
   (a) Neurotransmitter  (b) Hormone  (c) Local chemical messenger  (d) Pheromone

7. Respiration in sponges
   (a) Occurs anacrobically  (b) Occurs when water comes in and goes out.
8. Which one is the most concentrated source of food energy?

(a) Carbohydrates  
(b) Liquids  
(c) Both a and b  
(d) None of these

9. The ability of the plasma membrane to let some substances in and keep others out is called

(a) Homeostasis  
(b) Selective permeability  
(c) Osmosis  
(d) Diffusion

10. The type of connective tissue that stores lipids is called

(a) Adipose tissue  
(b) Storage tissue  
(c) Connective tissue  
(d) Blood tissue

Q.2: Identify and label the diagram.
B.Sc (Part-II)  

Subject: Zoology  

Paper: (B)  

Course Code: ZOO-402  

Course Title: Animal Form and Function (A Comparative Perspective)  

Subjective Part:  

Time Allowed: 02:30 Hours  

Maximum Marks: 20  

Note: attempt any Three questions from Part-II and one from Part-III  

Part-II  

Q.3: Write a note on any three of the following:  

(1) Neurotransmitter  
(II) Neuron  
(III) Myelin sheath  

(4+4+4=12)  

Q.4: Describe how sliding filament model explain muscle contraction.  

Q.5: Write a note on hormones of thyroid gland and heir function in mammals.  

Q.6: Describe structure of human heart and draw a labeled diagram.  

Q.7: Write a note on digestion in bivalve mollusks.  

Part-III  

Q.8: Write a detailed note on temperature regulation in fishes.  

(8)  

Q.9: Explain the types of egg on the basis of distribution of yolk.  

(8)