



UNIVERSITY OF THE PUNJAB

B.A. / B.Sc. Part – II
Supplementary Examination – 2018

Roll No.

Subject: Zoology-II
PAPER: A (Chordate Diversity)

TIME ALLOWED: 45 Min.
MAX. MARKS: 20

Attempt this Paper on this Question Sheet only.

Please encircle the correct option. Division of marks is given in front of each question.
This Paper will be collected back after expiry of time limit mentioned above.

- Q 1. Tick the correct option from the MCQs given below: (1/2x20 =10)
- The openings between the pharynx and outside of the body are:
(a) Proboscis (b) Pharyngeal pouch
(c) Pharyngeal slits (d) Both b and c
 - Hag fishes are the members of the class
(a) Cephalaspidomorphi (b) Myxini
(c) Chondrichthyes (d) Osteichthyes
 - Amphibians occur on all continents except:
(a) Europe (b) Antarctica
(c) Australia (d) Both a and b
 - Large tortoises of Galápagos Island may live in excess of:
(a) 300 years (b) 300 months
(c) 600 months (d) 100 years
 - Birds maintain body temperature between:
(a) 35-40°C (b) 37-41°C
(c) 38- 45°C (d) 32- 47°C
 - Order Perissodactyla include:
(a) Horses (b) Tapirs
(c) Camels (d) Both a and b
 - This covers the acorn worms:
(a) Ciliated epidermis (b) Gland cells
(c) Both a and b (d) None of them
 - Ammocoete larvae grows 7mm to 17 cm over:
(a) 3 years (b) 3 months
(c) 6 months (d) 6 years
 - In salamanders, gas exchange occur across the skin:
(a) 20-80% (b) 30-90%
(c) 10-15 % (d) None of them
 - Chameleons live mainly in:
(a) America and Europe (b) Australia and Asia
(c) Africa and India (d) Only Africa
 - Feathers also have roles in:
(a) Courtship (b) Incubation
(c) Waterproofing (d) All of these
 - The gestation period of an elephant:
(a) 9 months (b) 15 months
(c) 19 months (d) 12 months
 - Ciliated larvae of Enteropneusts are called:
(a) Tornaria (b) Trochophore
(c) Veliger (d) Nauplius

(P.T.O.)

14. Modified pelvic fins called claspers are present for sperm transfer in:

- (a) Sharks (b) Bony fishes
(c) Lamprey (d) Myxini

15. The pH that kills the most amphibian embryos:

- (a) more than 5 (b) 5 or less
(c) 10-12 (d) All of these

16. Temperature that results in both male and female offsprings of American Alligator is:

- (a) 31.5°C (b) 32.5-33°C
(c) 32°C (d) Both and b

17. Root like extensions of the tunic that help anchor to the substrate:

- (a) Stigmas (b) Endostyle
(c) Tentacles (d) Stolons

18. A band of smooth muscles that runs between hair follicle and lower epidermis:

- (a) Circular Muscles (b) Protractor muscles
(c) Arrector pili muscles (d) Muscular ridge

19. Ostrich lies in the order:

- (a) Sphenisciformes (b) Struthioniformes
(c) Rheiformes (d) Galliformes

20. Gland develop from the skin:

- (a) Epidermis (b) Dermis
(c) Hypodermis (d) Adipose tissue

Q2. Fill in the blanks:

(1/2x20=10)

- The tunicate heart lies at the base of the _____.
- The scales project posteriorly and give the shark skin a _____ texture.
- Anurans use their tongue and jaws in _____ feeding mechanism.
- The one surviving species of the order Rhynchocephalia is _____.
- Birds periodically shed and replace their feathers in a process called _____.
- Guard hairs may sometime be modified into thick, shafted hairs called _____.
- The diverticula of gut of acorn worms that release enzymes is called _____.
- Spiny dogfish sharks locate their prey by _____.
- _____ is a series of abrupt structural, physiological, and behavioral changes that transform a larva into an adult.
- In Reptiles, Ecdysis generally starts in the _____ regions.
- Paired clavicles fuse medially and ventrally into a _____.
- Upper molars have _____ roots.
- The cephalochorates consist of two genera and about _____ species.
- Elaborate color patterns on the dorsal side of skates and rays provide effective _____.
- _____ act as resonating structures and increase the volume of sound of frogs.
- Flying dragon launches itself from a tree, it can glide _____ or more.
- _____ involves picking up ants in the bill and rubbing over the feathers.
- _____ is an expression of number of teeth of each kind in one-half of the upper and lower jaw.
- The blood of acorn worms is _____ and lacks cellular elements.
- The molar and pre-molar of predatory mammals form a scissor-like shearing surface, called _____.



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Attempt this Paper on Separate Answer Sheet provided.

Q 3: Attempt any three questions out of following:

(3+3+3=9)

1. Define Siphon. How many siphons are there in Urochordates?
2. What is electroreception? Give any two examples of electric fishes.
3. What is Jacobson's organ? State its importance for Reptiles.
4. What are the two regions of stomach of Birds? Explain their function.
5. Explain the 'hair' as a unique characteristic of Mammals.

Q 4: Attempt any one question of the following:

(6)

1. Write a note on different mechanisms of gas exchange in Fishes.
2. Explain the reproduction and different modes of development in Mammals.



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PAPER: B (Animal Form and Function)

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Please encircle the correct option. Division of marks is given in front of each question.
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Q1. Select the right answer. Over writing and cutting is not allowed. $\frac{1}{2} \times 20=10$

1. CaCO_3 is present in the dermis of:
(a) Annelids
(b) Echinodermata
(c) Arthropods
(d) None
2. Scutes are present in :
(a) Frog
(b) Lizard
(c) Snake
(d) All
3. Baleen plates are present in:
(a) Snakes
(b) Lizard
(c) Whales
(d) Frog
4. Coxal glands are present in:
(a) Pillbugs
(b) Bees
(c) Cray fish
(d) Spider
5. The kidney present only in the embryo is:
(a) Pronephros
(b) Mesonephros
(c) Metanephros
(d) None
6. Trimethylamine oxide (TMO) is produced in:
(a) Trout
(b) Sharks
(c) Whales
(d) Bony fishes
7. Heartbeat of fetus can be heard in trimester:
(a) First
(b) Second
(c) Third
(d) None
8. Which of the following is agranulocytes:
(a) Eosinophils
(b) Basophils
(c) Neutrophils
(d) Lymphocytes.
9. Lysozyme is present in:
(a) Bile
(b) Blood
(c) Lymph
(d) Saliva

10. The chemical which destroy viruses is:
- (a) Interferon (b) Complement
(c) Histamine (d) Heparin
11. Respiration in arachnids take place by:
- (a) Lung (b) Parapodia
(c) Book lungs (d) Gills
12. The pigment present in the Polychaeta is:
- (a) Hemoglobin (b) Hemocyanin
(c) Hemerythrin (d) Chlorocruin
13. Protein produces number of Calories per gram:
- (a) 3.3 (b) 4.4
(c) 9.5 (d) 4.6
14. Which of the following element is essential for blood clotting:
- (a) P (b) Na
(c) Mo (d) Cu
15. Which of the component act as antifreeze?
- (a) Lipids (b) Glycoprotein
(c) Glycolipids (d) Carbohydrates
16. Cyclic AMP activates enzyme:
- (a) adenylate cyclase (b) protein kinase
(c) Endonuclease (d) None
17. Spectacles are present in:
- (a) Reptile (b) Mammals
(c) Birds (d) Amphibians
18. Sonar is found in :
- (a) Snakes (b) Frog
(c) Man (d) Bats
19. Dog can easily detect sound:
- (a) 40,000 (b) 50,000
(c) 60,000 (d) All

20. Oxytocin is a:

- (a) Pheromone (b) Local chemical
(c) Neuropeptide (d) None

Q2 Fill in the blanks

$\frac{1}{2} \times 20 = 10$

1. _____ is a muscularized, belt like rasp armed with chitinous teeth.
2. The _____ is the external covering of an animal.
3. The distinct aggregations of nerve cells in the head region are _____.
4. The land snails and slugs have distinct air breathing structures_____.
5. The most rigid form of connective tissue is called_____.
6. The _____ are lipid aggregates with a surface coat of bile salts.
7. Ccca are present in _____ herbivores.
8. _____ obtain their nutrients from the sediments of soft bottom habitats (muds and sands) or terrestrial soils.
9. The first hormones were probably _____.
10. The capacity to receive and respond to stimulus is called _____.
11. Brown fats are found in some_____.
12. Hemoglobin also carries waste carbon dioxide in the form of _____ from the tissues to the lungs for removal from the body.
13. _____ a small mass of tissues called the Sinoatrial node (SA node) at the entrance to the right atrium, initiates each heartbeat.
14. The controlling center for ovulation and menstruation is the _____.
15. _____ are disc shaped cell fragments that initiate blood clotting.
16. _____ is the circulating fluid of animals with an open circulatory system.
17. In arthropods, the epidermis of the body wall secretes a thick, hard cuticle made up of _____ that waterproofs the body.
18. _____ are simple glands connected to hair follicles in the dermis of mammals.
19. A _____ is excited by mechanical pressures and distortions.
20. _____ are paired invaginations of the ventral body wall that are folded into a series of leaf like lamellae.



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Q3. Give brief answers to any ten of the following questions. 1 x10 =10

1. How Malpighian tubules work as excretory organs in insects?
2. Which vertebrates lack stomach?
3. How does the respiratory system of birds differ from that of mammals?
4. What is sinus venosus?
5. Define glomeruli?
6. What is significance of parthenogenesis?
7. Write down the functions of swim bladder?
8. What is the strategy of suspension feeders?
9. What types of scales are present in cartilaginous fishes?
10. Kangaroo rat, a master of water conservation, comment.
11. Enlist different types of chemical messengers.
12. Differentiate between the functions of pineal gland and pituitary?
13. What is estrus cycle?
14. What is Jacobson's organ?
15. Give the need of transportation system in animals?

Q4 Attempt one of the following questions.

- 1 a) Which hormones are produced in Molluscs? 2
- a) Discuss compound eyes in Arthropods. 3
- 2 a) Discuss Hermaphroditism in invertebrates. 2
- b) Name some coelomocytes present in invertebrates along with 3
the functions they perform?