

ZOOLOGY

Time: 15 minutes

2017

Max marks: 08

SECTION "A" MULTIPLE CHOICE QUESTIONS

1. Choose the correct answer for each from the given options:

- i. The largest invertebrate in the world is:
Whale () elephant (*) giraffe (*) squid
- ii. This substance present in the saliva of leech prevents blood from clotting in its body:
Lysozyme () Caseinogen (*) Fibrinogen (*) Hirudin
- iii. In Planaria, digested food is distributed throughout the body by:
* Diverticulae (*) Capillaries (*) Intestine (*) Blood
- iv. In non-competitive inhibition, a molecule binds to an enzyme at a site called:
Allosteric site () Active site (*) Any site (*) Both Active and Allosteric sites
- v. Amoebiasis is caused by:
Entamoeba celi () Fungi (*) Entamoeba histolytica (*) Virus
- vi. Worm like and motile zygote of Plasmodium is called:
Ookinete () Akinete (*) Oocyst (*) Schizont
- vii. The sub-units of Nucleic acid are:
Dinucleotides () Nucleosides (*) Nucleotides (*) Polynucleotides
- viii. Water vascular system is found in:
Cockroach () Starfish (*) Earthworm (*) Sponge
- ix. Ordo Dipnoi includes:
(a) Sea horse () Silver fish (*) Lung fish (*) Shark
- x. This one is Nucleus of steroid:
Diagrams
- xi. These substances are used in low concentration to inhibit the growth of micro-organisms:
Vaccines () Hormones (*) Antibiotics (*) Enzymes
- xii. The air that is always present in the lungs of human being is termed as:
Residual Volume () Total lung capacity (*) Tidal volume (*) Vital Volume
- xiii. Most of the enzymes in the human body are highly active at this temperature:
37°F () 0°C (*) 37°C (*) 40°C
- xiv. Incomplete double circulation of blood is found in:
Mammals () Reptiles (*) Amphibians (*) Both Amphibians and Reptiles
- xv. Pollen, dust, animal fur, cold and smoke are the causes of:
Astama () Lung Cancer (*) Tuberculosis (*) Emphysema
- xvi. This one is referred to as silent killer:
Hypertension () Heart Attack (*) Aids (*) Cancer

SECTION “B” (SHORT-ANSWER QUESTIONS)

NOTE: Answer 10 questions from this section.

- (i) How is DNA different from RNA?
- (ii) Why are leucocytes known as soldiers of the body?
- (iii) How does Pearl formation take place in Oysters?
- (iv) How does smoking cause lung cancer in Man?
- (v) Why can Kiwi not fly?
- (vi) Liver is a metabolic factory. Why?
- (vii) How does an enzyme perform catalytic activity with substrate molecule ?
- (viii) How Protozoan is differentiated by means of their locomotary organelles?
- (ix) What are parasitic adaptations in flatworms?
- (x) Name the different mouth parts found in insects / Give an example of each.
- (xi) What is the role of Haemoglobin and Myoglobin in the human body?
- (xii) Define Peristalsis and Anti-peristalsis movement.
- (xiii) Label the parts mentioned A, B, C, and D in the given Diagram.
- (xiv) Write the example of each of the following class:
 - (a) Arachnida
 - (b) Schyphozoa
 - (c) Cestoda
 - (d) Cephalopoda
- (xv) Write note on cloning.
- (xvi) Write the names of different conjugated molecules with examples.

SECTION “C” DETAILED-ANSWER QUESTIONS

NOTE: Answer 2 question from this section.

- 3. Write the classification and functions of any one of the following:
 - (i) Proteins
 - (ii) Carbohydrates
- 4. Describe the salient features of phylum Annelida, classify the phylum and write the characteristics of each class with example.
OR Describe the characteristics of the most complex and successful group of vertebrates. Classify into sub-classes and write the characteristics of each sub-class with examples.
- 5. Describe the internal structure of the Human heart and mechanism of blood circulation through it with the help of diagram.
OR List the names of Gastro-intestinal disorders in Man. Give description of any five of them.

SECTION “A” MULTIPLE CHOICE QUESTIONS

1. Choose the correct answer for each from the given options:

- (i) Humann sex hormones are classified as:
(a) Proteins (b) Triglycerides (c) **Steroids** (d) Carbohydrates
- (ii) Nucleic acid and protein combine to form:
(a) Glycoprotein (b) Glycolipid (c) Lipoprotein (d) **Nucleoprotein**
- (iii) The animal having false body cavity is called:
(a) Acoelomate (b) Coelomate (c) **Pseudocoelomate** (d) Protostomes
- (iv) Alternation of generation is the most important characteristic of:
(a) Annelids (b) **Coelentrates** (c) Poriferans (d) Arthropods
- (v) Animals having both male and female reproductive organs are called:
(a) Unisexual (b) **Hermaphrodite** (c) Heterophrodite (d) Prototheria
- (vi) Larva of sponge is called:
(a) Trochophore (b) Planula (c) **Amphiblastula** (d) Tadpole
- (vii) Farming of honeybee is called:
(a) **Apiculture** (b) Sericulture (c) Tissue culture (d) Agriculture
- (viii) These have complete ventilation:
(a) Frogs (b) Reptiles (c) **Birds** (d) Fish
- (ix) Balanoglossus is an example of:
(a) Urochordata (b) **Hemichordata** (c) Cephalachordata (d) Protochordata
- (x) Honeybee has specialized moth parts for:
(a) Chewing & biting (b) **Chewing & lapping** (c) Chewing & siphoning (d) Chewing & sucking
- (xi) This one is the function of the aery:
(a) Carrying oxygenated blood (b) Carrying deoxygenated blood
(c) Carrying pure blood (d) **Carrying the blood away from the heart**
- (xii) All the representatives of this class of Protozoa are parasitic:
(a) **Sporozoa** (b) Flagellata (c) Ciliata (d) Phizopoda
- (xiii) The excretory organs of Platyhelminthes are:
(a) Nephrons (b) Melpighian tubules (c) **Potonephridia** (d) Metanephridia
- (xiv) The study of fish is called:
(a) Osteology (b) **Ichthyology** (c) Ornithology (d) Hydrobiology
- (xv) Marsupials are:
(i) **Viviparous** (b) Egg laying mammals (c) Placental mammals (d) Oviviaryous
- (xvi) The body cavity of grasshopper is known as:
(a) Shizocoel (b) Pseudocoel (c) Coelom (d) **Hamocoel**

SECTION “B” (SHORT-ANSWER QUESTIONS)

NOTE: Answer 10 questions from this section.

- (i) Write any four functions of proteins.
- (ii) What is Symmetry?
- (iii) Write any four characteristics of class Reptilia.
- (iv) What adaptation made the birds capable to fly?
- (v) Name the factors which affect the capabilities of Enzymes.
- (vi) Define any two main branches Biology.
- (vii) Write any two biologically important properties of water.
- (viii) Define diploblastic and triploblastic organization with examples.
- (ix) What is meant by Polymorphism ? Explain with reference to phylum Cnidaria.
- (x) Name the common edible fishes of Pakistan.
- (xi) Write a note on lung cancer.
- (xii) Write the functions of human blood.
- (xiii) Write a note on Thalassaemia.
- (xiv) Define conjugated molecules and explain any one of them.
- (xv) Define Protostomata and Deutrostomata with examples.

SECTION “C” DETAILED-ANSWER QUESTIONS

NOTE: Answer 2 questions from this section.

- 3. Define immunity. Give an account of innate. **OR** adaptive immune system.
- 4. Describe the salient features of Phylum Mollusca **OR** Arthropoda. Classify them and write the characteristics of any three classes with examples.
- 5. Describe the breathing mechanism in human being. Explain the transport of CO_2 and O_2 .
OR Define Digestion. Explain the digestion of proteins and lipids in the Digestive tract of Man.

ZOOLOGY

Time: 15 minutes

2015

Max marks: 08

SECTION “A” MULTIPLE CHOICE QUESTIONS

1. Choose the correct answer for each from the given options:

(i) This branch of biology deals with the study of defense mechanism against diseases:

* Parasitology * Epidemiology * **Immunology** * Physiology

(ii) Farming of honey bee is called:

* **Apiculture** * Sericulture * Agriculture * Hydrepinics

(iii) The asexual cycle of Plasmodium, completed in man, is called:

* Gamogony * **Sexualogony** * Sporogony * Conjugation

(iv) Egg-laying mammals belong to sub-class:

* Theria * **Prototheria** * Metatheria * Eutheria

(v) The skeleton of sponges is made up of:

* Ostia * Osculum * **Spicules** * Spingocoel

(vi) Blood clotting is initiated by:

* R.B.Cs * W.B.Cs * **Platelets** * Plasma

(vii) The remaining volume in the lungs is:

* Vital volume * Tidal volume * **Residual Volume** * Active

(viii) This is included in fishes:

* Starfish * Cuttlefish * Jellyfish * **Sea Horse**

(ix) Scorpion belongs to phylum:

* **Arthropoda** * Mollusca * Porifera * Annelida

(x) Red color is imparted to the muscles by:

* **Myoglobin** * CO_2 * Water * Goblet cells

(xi) T.B is caused by:

* Allergy * **Bacterium** * Nicotine * Virus

(xii) Closed circulatory system was first developed in this group of invertebrates:

* **Annelida** * Arthropoda * Mollusca * Echinodermata

(xiii) Chondrichthyes have an exoskeleton of:

* **Placoid scales** * Cycloid scales * Ctenoid scales * Neutrophills

(xiv) Antibodies are produced by:

* **B cells** * 'T' cells * Macrophages * Neutrophills

(xv) These are included in Parazoa:

* Roundworms * Flatworms * **Sponges** * Epidermal scales

(xvi) Respiratory pigment is absent in:

* Earthworm * Frog * Rabbit * **Cockroach**

SECTION “B” (SHORT-ANSWER QUESTIONS)

NOTE: Answer 10 questions from this section.

2.
 - I. Write the functions of Lymphatic system.
 - II. State any four distinguishing features of phylum Echinodermata.
 - III. Differentiate between Hibernation and Aestivation and give their examples.
 - IV. State the causes and systems of Asthma OR Emphysema.
 - V. Give the symptoms of Malaria in human beings.
 - VI. Draw a table to show the levels of biological organization . No description is required.
 - VII. Define Molecular Biology and Biotechnology.
 - VIII. Write note on Antibiotics.
 - IX. Describe Polymorphism.
 - X. Discuss the economic importance of Arthropoda.
 - XI. Describe any four salient characters of phylum Porifera.
 - XII. Write any four differences between Ratitae and Carinidae and give examples.
 - XIII. Write a note on Thalassemia.
 - XIV. Differentiate between Active and Passive immunity.
 - XV. Write a note on structural types of Proteins.

SECTION “C” DETAILED-ANSWER QUESTIONS

NOTE: Answer 2 questions from this section

3. Describe the characters of phylum Annelida OR Protozoa. Classify the phylum and give characteristics of any three classes with examples.
4. Explain the structure of Human heart. Draw neat and labeled diagram of the internal structure of Human heart.
OR List Cardiovascular Disorders. Write the causes, symptoms and precautionary measures of any five disorders mentioned in the list.
5. Describe various disorders of gastrointestinal tract in human being.

SECTION “A” MULTIPLE CHOICE QUESTIONS

1. Choose the correct answer for each from the given options:

- (i) 55% of blood comprises:
*Platelets * **Plasma** * R.B.Cs * W.B.Cs
- (ii) The number of chambers in the heart of fish is:
***Two** * Three * Four * Five
- (iii) The body cavity of insects is known as:
*Schizocoel * Pseudocoel * **Haemocoel** * None of these
- (iv) Its function begins before and ceases with death:
*Brain * **Heart** * Lung * Blood
- (v) The poison of snake is called:
*Fang * **Venom** * Salive * None of these
- (vi) This class of protozoa is totally parasite:
*Flagellata * **Sporozoa** * Rhizopoda * Ciliata
- (vii) The excretory organs of insects is:
*Kehrer's organ * Anterior gland * **Malpighian tubule** * Green gland
- (viii) This is the connecting link between birds and reptiles:
*Duck bill * Echidna * **Archaeopteryx** * Hedgehog
- (ix) Sound-producing organ syrinx found in:
*Mammals * **Bird** * Reptiles * Amphibians
- (x) T.B is caused by:
*Allergy * **Bacterium** * Virus * None of these
- (xi) Study of sea organism is called:
*Microbiology * Parasitology * Human-Biology * **Marine-Biology**
- (xii) The largest invertebrate is:
*Sepia * **Squid** * Octopus * Nautilus
- (xiii) Study of insects is called:
*Ichthyology * Limnology * **Entomology** * Parasitology
- (xiv) An animal starts its life as a:
*Morula * Blastula * **Zygote** * Gastrula
- (xv) Multicellular free swimming larva of sponge is:
*Tadpole * Tornaria * **Amphiblastula** * Bipinnaria
- (xvi) The total average lung capacity of adult human being is:
*6000 cm³ * 7000 cm³ * **5000 cm³** * 8000 cm³

SECTION “B” (SHORT-ANSWER QUESTIONS)

NOTE: Answer 10 questions from this section.

2.

- I.** Write four basic Characteristics of phylum chordata.
- II.** Write four differences between Chondrichthyes and Osteichthyes.
- III.** What do you understand by Ecdysis?
- IV.** What do you understand by Cell Mediated Immunity (CMI) ?

- V. Define Bilateral and Radial symmetry with examples.
- VI. Write four flight adaptations in birds.
- VII. What is Canal system? Name its different types.
- VIII. What is Parasitism? Define Monogenic and Dydenic parasites.
- IX. Name moth parts of insects with examples.
- X. Write a note on Dipnoan (Lung Fish).
- XI. Write four functions of liver.
- XII. What is meant by cloning?
- XIII. Name the functions of lymphatic system.
- XIV. Name the groups of Carbohydrates and write the properties of any one.
- XV. Write a note on Leukemia.

SECTION “C” DETAILED-ANSWER QUESTIONS

NOTE: Answer 2 questions from this section

- 3. Define respiration. Explain the respiratory system of Man with diagrams.
- 4. Describe the salient features of Phylum Mollusca. Classify them and write the characteristics of each class with examples.
OR Give the general characteristics of class mammals. Write the characteristics of each sub class with examples.
- 5. Define digestion. Explain the process of digestion in man with the help of diagram.
OR What are enzymes? Give the types of enzymes. Discuss the factors their activity.

ZOOLOGY

2013

Time: 15 minutes

Max marks: 08

SECTION “A” MULTIPLE CHOICE QUESTIONS

1. Choose the correct answer for each from the given options:

- (i) The largest organ of human body is:
 *Heart * Stomach * Liver * Brain
- (ii) Electric organs are present in:
 *Scoliodon * Torpido * Flying fish * Palla fish
- (iii) Nematocysts are present in:
 *Paramecium * Planaria * Hydra * Ascaris
- (iv) Air sacs are present in:
 *Fishes * Amphibians * Birds * Mammals

- (v) The protein part of holo-enzyme is:
*Apoenzyme * Ribozyme * Co-enzyme * Enzyme
- (vi) In low concentration, these inhibit the growth of microorganisms:
*Antibodies * Antigens * Antitoxins * Antibiotics
- (vii) Phylum Porifera is included in:
*Protozoa * Parazoa * Protista * Metazoa
- (viii) In torsion, twisting of visceral mass occurs at an angle of:
*80° * 90° * 180° * 190°
- (ix) Is considered as living fossil:
*Spider * Limulus * Honeybee * Scorpion
- (x) Balanoglossus is an example of:
*Urochordata * Hemichordata * Cephalochordata * Protochordata
- (xi) Myoglobin is found in:
*Blood * Muscles * Urine * Liver
- (xii) The national animal of Pakistan is:
*Markhor * Dolphin * Donkey * Leopard
- (xiii) The lungs capacity of adult human is:
*2 litres * 5 litres * 10 litres * 50 litres
- (xiv) The Locomotory organs or class starfish are:
*Cilia * Flagella * Pseudopodia * Tubefeet
- (xv) Grasshopper belongs to phylum:
*Annelida * Arthropoda * Mollusca * Porifera
- (xvi) Food vacuole is present in:
*Amoeba * Hydra * Planaria * Cockroach

SECTION "B" (SHORT-ANSWER QUESTIONS)

NOTE: Answer 10 questions from this section.

2.

- I.** Distinguish between Ratite and Carinatae.
- II.** Define alternation of generation in animals.
- III.** Differentiate between tube-like digestion and sac-like digestion.
- IV.** Define Cyanosis or Emphysema.
- V.** Describe the role of Hemoglobin in the transport of carbon dioxide.
- VI.** Differentiate between saturated and unsaturated Acyglycerol.
- VII.** Distinguish between Active and Passive Immunity.
- VIII.** Define complete and incomplete Metamorphosis.
- IX.** Define Anorexia nervosa and Bulimia nervosa.
- X.** Mention the fundamental characteristics of class Amphibia.

- XI.** Give the economic importance of insects.
- XII.** Draw a labeled diagram of L.S of Hydra.
- XIII.** Distinguish between Hibernation and Aestivation.
- XIV.** Name the four important branches of biology.
- XV.** Define complete ventilation and incomplete ventilation.

SECTION “C” DETAILED-ANSWER QUESTIONS

NOTE: Answer 2 questions from this section

- 3.** Describe the internal structure of the human heart and explain the cardia cycle. Also draw the labeled diagram of the Human Heart
- 4.** Describe the salient features of Phylum Annelida or Arthropoda. Classify them and write the characteristics of each class with examples.
- 5.** Describe various Gastro-Intestinal disorders.
- OR** What is immunity? Describe innate immune system.

ZOOLOGY

Time: 15 minutes

2012

Max marks: 08

SECTION “A” MULTIPLE CHOICE QUESTIONS

1. Choose the correct answer for each from the given options:

- (i) A group of similar inter-breeding organism constitutes a:
*Genus * Species * Population * Community
- (ii) The salivary glands of female anopheles mosquito contain these parasites:
*Merozoites * Sporozoites * Trophozoites * Gastrozoites
- (iii) The body cavity of grasshopper is known as:
*Schizocoel * Pseudocoel * Haemocoel * Coelom
- (iv) Parabrochi are found in:
*Birds * Reptiles * Amphibians * Mammals
- (v) Farming of honeybee is:
*Agriculture * Apiculture * Culture * Sericulture
- (vi) Excretory organs of Platyhelminthes are:
*Nephrons * Malpighian tubules * Metanephridia * Protonephridia
- (vii) The study of birds is:
*Ornithology * Osteology * Ichthyology * Entomology
- (viii) Sphygmomanometer is used of measuring:
*Blood pressure * Fever * Breathing rate * Growth rate
- (ix) The larva of Echinoderm is:

- *Bipinneria * Tomaria * Planula * Amphiblastula
- (x) The accumulation of blood within tissues is:
*Atherosclerosis * Thrombosis * Phagocytosis * Haematoma
- (xi) This is a fish:
*Starfish * Jellyfish * Seahorse * Cuttlefish
- (xii) Teeth in man are:
*diphyodont heterodont * thecodont * all of these
- (xiii) Digestion is brought about by:
*Acid * Alkaline solution * Enzymes * Minerals
- (xiv) Most of the absorption of food takes place in the:
*Stomach * Small intestine * Large intestine *Rectum
- (xv) The stimulus for the contraction of heart originates from:
*A.V node * S.A node * Aortic bodies Carotid bodies
- (xvi) In medical science, blue babies are known as:
*Cyanosis * Edema * Atherosclerosis * Thrombus

SECTION “B” (SHORT-ANSWER QUESTIONS)

NOTE: Answer 10 questions from this section.

2.

- I.** State the names and functions of cells present in the body wall of Sponge.
- II.** Distinguish between Acraniata and Craniata.
- III.** Mention the fundamental characters of Chordates.
- IV.** Name the edible fishes of Pakistan.
- V.** Differentiate Radial symmetry and Bilateral symmetry.
- VI.** Name the parts marked in the given diagram.
- VII.** Write the characteristics of Sarcodina with examples.
- VIII.** Name the various types of mouth parts present in insects and give one example of each.
- IX.** Describe functions of blood.
- X.** Write a note on lung cancer.
- XI.** Name the factors which affect the activity of enzymes and describe any one of them.
- XII.** State the name and functions of various types of canal system in Porifera.
- XIII.** Distinguish between: Diploblastic and Triploblastic Organization OR Hibernation and Aestivation.
- XIV.** Describe plaque and Dental diseases in humans.

SECTION “C” DETAILED-ANSWER QUESTIONS

NOTE: Answer 2 questions from this section

3. Describe the salient features Phylum Annelida

OR Phylum Mollusca. Classify them and write the characteristics of each class with examples.

4. What is respiration? Describe the organs and mechanism of respiration in human.

5. What is digestion ? State its types. Describe the process of digestion in human.

OR

What is the importance of Biology for the welfare of mankind?

ZOOLOGY

2011

SECTION “A” MULTIPLE CHOICE QUESTIONS

1. Choose the correct answer for each from the given options:

- (i) The ‘lub’ sound is made when these valves close:
*bicuspid * tricuspid * semilunar * bisuspid and tricuspid
- (ii) This animal belongs to class crustacean of phylum arthropoda:
*prawn * Honeybee * Scorpion * Centipede
- (iii) The enzyme present in gastric juice is:
*Ptyalin * Pepsin * Trypsin * Amylase
- (iv) Most numerous Leukocytes present in blood are:
* Lymphocytes * Neutrophils * Monocytes * Eosinophils
- (v) This polysaccharide is present in human muscles:
*Amylase * Collagen * Glycogen * Myoglobin
- (vi) Uncontrolled production of leucocytes leads to:
*Leukaemia * Thalassaemia * Oedema * Cyanosis
- (vii) Class cyclostomata can be distinguished from the rest of vertebrates in:
*Long eel-like body * Absence of scales * Absence of jaws * Ventral suctorial mouth
- (viii) The study of fishes is called:
*Osteology * Ichthyology * Ornithology * Hydrobiology
- (ix) The blood in earthworm is red due to:
RBCs * Haemoglobin * Myoglobin * Haemocyanin
- (x) In cockroach, the partly digested food is stored in:
*Stomach * Pharynx * Crop * Gizzard
- (xi) The most important characteristics of Echinoderms is:
*Water vascular system * Exoskeleton * Low grade organization* Regeneration
- (xii) Amniotes include:
*Fishes, Amphibians and Reptiles * Aves, Amphibians and fishes * Reptiles, Aves and Mammals *
Mammals, Fishes and Amphians
- (xiii) Curved teeth in snakes for biting are called:
*Incisors * Canines * Fangs * Vomerine teeth
- (xiv) Respiratory pigment in the muscles is:
*Myoglobin * Globin * Haemoglobin * Haemocyanin
- (xv) Blood does not transport gasses in this animal:
*Cockroach * Frog * Earthworm * Fish
- (xvi)The heart never receives oxygenated blood in this animal:

*Frog * Fish *Snake * Man

SECTION “B” (SHORT-ANSWER QUESTIONS)

NOTE: Answer 10 questions from this section.

2.

- I.** Write the important characteristics of class Mammalian.
- II.** State the effects of pH and temperature on the activity of enzymes.
- III.** State the causes and symptoms of Asthma.
- IV.** Write a note on Lup and Dup.
- V.** Write a note of structure and function of RCBs.
- VI.** Define the following and give examples of each:
 - a)** Protostome
 - b)** Hibernation
 - c)** Coelom
 - d)** Haemocoel
- VII.** Write the parasitic adaptations of Platyhelminthes.
- VIII.** What is meant by Polymorphic colony? Give the names of different zooids and mention their functions.
- IX.** Name the parts marked in the diagram.
- X.** Differentiate between Running birds and Flying birds.
- XI.** Name the protein digesting enzymes and their site of secretion in the human alimentary canal.
- XII.** Write the definition, types and examples of Metamorphosis.
- XIII.** Write a note on Economic importance of Arthropods.
- XIV.** How is CO_2 transported from tissues to lungs?
- XV.** Define lymphatic system. What are the functions of lymphatic system?

SECTION “C” DETAILED-ANSWER QUESTIONS

NOTE: Answer 2 questions from this section

- 3.** Define immunity. Give a detailed account of Innate OR Adaptive immune system.
- 4.** Give salient features of Phylum Arthropoda OR Mollusca. Classify the phylum and give character of each class with examples.
- 5.** Give a list of Gastro-intestinal disorders. Describe any five disorders.

OR

Write in detail various Cardio-vascular disorders.

SECTION "A" MULTIPLE CHOICE QUESTIONS**1. Choose the correct answer for each from the given options:**

(i) Trypanosoma belongs to the class:

*Mastigophora * Rhizopoda * Ciliophora * Suctorina

(ii) Kangaroo belongs to a/an :

*Egg-laying mammal * Marsupial mammal * Placental mammal * Aquatic mammal

(iii) It is commonly known as epigastric following the meals:

*Anorexia nervosa * Enteritis * Piles * Dyspepsia

(iv) Chondrichthyes have an exoskeleton of:

*Placoid scales * Sycloid scales * Ctenoid Scales * Epidermal Scales

(v) S-A node is present in:

*Left atrium * Right atrium * Left ventricle * Right ventricle

(vi) All are the examples of natural cloning except:

*Regeneration * Tumour * Monozygotic * Dizygotic twins

(vii) The human dental formula is:

$i \frac{2}{2}, \frac{1}{1} pm \frac{3}{3} \frac{2}{2}$ $i \frac{2}{1}, \frac{1}{1} pm \frac{2}{2} \frac{3}{3}$

$i \frac{2}{2}, \frac{1}{1} pm \frac{2}{2} \frac{3}{3}$ $i \frac{2}{2}, \frac{1}{2} pm \frac{2}{2} \frac{3}{3}$

(viii) Some animals feed upon the fragments of decomposing materials are called:

*Saprophytes * Detritivores * Carnivores * Parasites

(ix) The massive accumulation of blood within a tissue is called:

*Atherosclerosis * Thrombosis * Phagocytosis * Haematoma

(x) The removal of the undigested food from the body is called:

*Egestion * Excretion * Elimination * Ingestion

(xi) In medical science blue babies are known as:

*Cyanosis * Edema * Atherosclerosis * Thrombosis

(xii) The farming of silk worm is called:

*Viroculture * Aquaculture * Apiculture * Sericulture

(xiii) Piles are known as:

*Dyspepsia * Haemorrhoids * Dysentery * Diarrhoea

(xiv) The study of birds is called:

*Ichthyology * ornithology * Enomology * gerontology

(xv) Teeth in mammals are:

*Homodont * Acrodont * Heterodont * Polyphyodont

(xvi) The excretory system of Platyhelminthes consists of:

*Protonephridia * Metanephridia * Malpighian tubules * Nephron

SECTION “B” (SHORT-ANSWER QUESTIONS)

NOTE: Answer 10 questions from this section.

2.

- I. Write a short account of Emphysema.
- II. Define Metamorphosis and discuss its types.
- III. Write a note on cloning.
- IV. What do you know about Holozoic Nutrition?
- V. Give an account of Adaptive Immune System.
- VI. Differentiate between DNA and RNA.
- VII. Difference between Chondrichthyes and Osteichthyes.
- VIII. Discuss any two G.I.T disorders.
- IX. Write a note on Symmetry.
- X. Write down the function of Blood.
- XI. Define Protozoa. Name their four classes with examples.
- XII. (xii) Describe the fundamental characteristics of Phylum Chordata.
- XIII. (xiii) What is Polymorphism? Explain with reference to cnidaria.
- XIV. (xiv) Define five kingdoms with examples.
- XV. Name the parts marked in the diagram.
- XVI. Describe the parasitic adaptation in the phylum platyhelminthes.

SECTION “C” DETAILED-ANSWER QUESTIONS

NOTE: Answer 2 questions from this section

3. Describe the structure of the human heart. Also explain cardiac cycle. Draw a labeled diagram only of the human heart.
4. Explain the term digestion. Discuss the process of digestion in man (no diagram is needed).
5. Describe the salient features of Phylum Arthropoda or Annelida. Classify it giving the characteristics of any three classes with examples.

SECTION "A" MULTIPLE CHOICE QUESTIONS**1. Choose the correct answer for each from the given options:**

(i) Which is not true for mammalian RBCs?

- *They contain hemoglobin * The transparent O_2 and CO_2
* They contain nucleus * They are bi-concave in shape

(ii) All are mammalian character except.

- *Seven cervical vertebrae * mammary gland * The codont teeth * Cold-Blooded animals

(iii) the larva of sponges is called:

- *Bipinnaria * Tornaria * Amphiblastula * Planula

(iv) The farming of honeybee is called:

- *Sericulture * Apiculture * Agriculture * Aquaculture

(v) All are the examples of natural cloning except:

- *Regeneration * Tumor * Monozygotic * Dizgotic twins

(vi) The body Cavity of arthropods is called:

- *Haemocoel * Blastocoel * Pseudocoel * Coelenteron

(vii) The protein-digesting enzyme of pancreatic juice is:

- *Amylase * Lipase * Trypsin * Pepsin

(viii) The average lung capacity of man Is about:

- *3.5 liters * 4 liters * 5 liters * 2.5 liters

(ix) Nematodes are:

- *Pseudocoelomate * Acoelomate * Eucoelomate * Schzocoelomate

(x) The joining of two monomers is cllled:

- *Hydrolysis * Condensation * Fusion * Electrolysis

(xi) Which phylum is exclusively marine?

- *Porifera * Coelenterate * Echinodermate * Mollusca

(xii) Digestion is intra-cellular in:

- *Earthworm * Cockroach * Amoeba * Humans

(xiii) The sound producing organ in birds is:

- *Larynx * Pharynx *Vocal sac * Syrinx

(xiv) The repiratory organ of scorpion is called:

- *Ctenidia * Book-lungs * Trachea * Gills

(xv) The stimulus for the contraction of heart originates from:

- *A.V node * S.A node * Aortic bodies * Carotid bodies

(xvi) Amniotes do not include:

- *Reptiles * Birds * Mammals *Amphibians

SECTION “B” (SHORT-ANSWER QUESTIONS)

NOTE: Answer 10 questions from this section.

2.

- I.** Define molecular biology and Biotechnology.
- II.**
 - a) Differentiate between Nucleoside and Nucleotide.
 - b) Give the functions of carbohydrates.
- III.** Write one function of each of the following:
 - a) Red-blood corpuscles
 - b) Neutrophils
 - c) Lymphocytes
 - d) Blood platelets
- IV.** Name the various types of cells present in the body-wall of sponge and state their function.
- V.** Write the dental formula of Man. Explain Dental Carie briefly.
- VI.** Write three basic characteristics of chordates.
- VII.** Differentiate between the following:
 - a) Holoenzyme and Poloenzyme
 - b) Enzyme activator and Enzyme inhibitor
- VIII.** Describe any two blood diseases briefly.
- IX.** Write a note on flight adaptations in birds.
- X.** Why are amphibians unsuccessful land vertebrates?
- XI.** Name the ophylum and class of animals mentioned below:
 - a) Nereis
 - b) King crab(Limulus)
 - c) Octopus
 - d) Paramecium
- XII.** Describe briefly the nutrition in hydra.
- XIII.** Differentiate between the following:
 - a) Pseudocoelom and Coelom
 - b) Open-type and Closed-type of circulatory system
- XIV.** Name the parts marked in the diagram of water vascular system of Echinoderms
- XV.** Describe the parasitic adaptation in platyhelminthes.

SECTION “C” DETAILED-ANSWER QUESTIONS

NOTE: Answer 2 questions from this section

- 3.** Describe the salient features of phylum Mollusca. Classify it giving characteristics of and 3 classes with examples.
- 4.** What is immunity? Describe innate immune system in detail.
- 5.** Describe the breathing mechanism in humans and explain the transport of oxygen in the human body.

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Note: Attempt three questions in all:

1.

a) Write true or false for the following statements:

- (i) During inspiration the volume of thoracic cavity is increased.
- (ii) Papillary muscles are present at inner walls of the ventricles.
- (iii) Each human RBC contains 380 million haemoglobin molecule.
- (iv) The bile pigment, biliverdin, contains red color.
- (v) Ester bond is formed between carboxylic acid and amino group.
- (vi) In the class amphibia exoskeleton is absent.

ANSWER: (i) T (ii) T (iii) F (iv) F (v) F (vi) T

b) Differentiate between the following:

- (i) Reptalia and Carinatae
- (ii) Chondrichthyes and Osteichthyes

c) Write detailed notes on any two of the following:

- (i) Proteins
- (ii) Lipids
- (iii) Carbohydrates
- (iv) Water

2.

a) Fill in the blanks with the correct answer:

- (i) The national animal of Pakistan is Markhor.
- (ii) The twisting visceral mass at 180° in mollusca is called torsion.
- (iii) The teeth of a snake that bite are called fangs.
- (iv) The human lung contains 700 million alveoli.
- (v) In cartilaginous fishes the body is covered by placoid scales.
- (vi) Snakes have no limbs and no ears.

b) Write a note on endoparasites of a human being.

- (i) Write a note on Marsupial mammals.

c) Define digestion. Describe the process of digestion in man.

3.

a) Match the items of column 'A' With those of column 'B':

Column 'A'

- (i) Hypertension
- (ii) Cerbroside
- (iii) Thallasaemia
- (iv) Red coral
- (v) Pseudo coelmate
- (vi) Piles

Column 'B'

- Ascaris
- Hemorrhoids
- Marjan
- B chain
- Brain
- Silent killer

b) Draw a labeled diagram of L.S of the human heart.

(i) Define Lymph. Write the functions of the Lymphatic system.

c) Explain in detail the cardiovascular disorders.

4.

a) Fill in the blanks with the correct answer.

- (i) In sponges the ectodermal layer is made up of flat sells called **pinacoytes**.
- (ii) The larva cnidaria is called planula.
- (iii) The volume of the blood pumped per minute by the left ventricle is called cardiac output.
- (iv) In malaria the temperature of the human body may rise to as high as 106°F.
- (v) Reptiles, birds and mammals are collectively called Amniotes.
- (vi) Nitrogenous base combines with pentose sugar to form **Nucleoside**.

b)

- (i) How is carbon dioxide transported from tissues to the lungs?
- (ii) Write a note on the respiratory system of fishes.

c) What are enzymes? Give the type of enzymes and their activity.

5.

a) Choose the correct answer for each from the given options:

- (i) Phylum belongs to deuterotome:
*Mollusca * Rthropoda * Echinodermata * Annelida
- (ii) Female ascaris may produce eggs everyday:
*200,000 * 20,000 * 300,000 * 30,000
- (iii) The cell of the ectoderm which contains ostium in porifera is called:
*Porocytes * Pinococytes * Choanocytes * Amoebocytes
- (iv) Monotremes are also called:
*Prototerians * Methatherians * Calcarians * Eutherians
- (v) The scale with outer spiny edges is called:
*Placoid * Ctenoid * Cycloid * None of these

b)

- (i) Differentiate between Artery and Vein.
- (ii) Write a note on the economic importance of arthropods.

c) Write the salient features of phylum Protozoa OR the phylum Annelida. Name its classes and give the characters and examples of each class.