[This question paper contains 4 printed pages.]

(20)

Your Roll No 2023

Sr. No. of Question Paper	:	4535	**E**
Unique Paper Code	:	32231401	
Name of the Paper	:	Comparative Anatomy of Vertebrates	
Name of the Course	:	**B.Sc (H) Zoology**	
Semester/Annual	:	IV	

Duration : 3 Hours

Maximum Marks : 75

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Answer **five** questions in all.
3. **Question no. 1** is compulsory.

1. (a) Define **any five** of the following terms: (1×5=5)

(i) Dermatocranium

(ii) Neuromast Organs

(iii) Procoelous

(iv) Archinephros

(v) Venous heart

(vi) Holocrine

(b) Distinguish between any Five of the following: (2×5=10)

(i) Larynx and Syrinx

(ii) True horns and Antlers

(iii) Contour and Down feathers

(iv) Rod and Cone cells

(v) Single circulation and double circulation

(vi) Spinal and cranial nerves

(c) State exact location and function of the following: (2×4=8)

(i) Preen gland

(ii) Jacobson's organ

(iii) Carnassial tooth

(iv) Meibomian gland

(d) State whether following statements are true or false: (1×4=4)

(i) Sebaceous glands of mammals are apocrine

(ii) Placoid scales are epidermal derivatives.

(iii) Craniostylic jaw suspension is found in fishes.

(iv) Gizzard is the part of bird stomach.

2. Explain the anatonlical details of heart in different vertebrates and draw suitable diagrams. (12)

3. (a) Discuss the succession of kidney among vertebrates with suitable diagrams. (6)

(b) Describe various types of uteri found in mammals with suitable diagrams. (6)

4. Describe the various parts of brain. Compare the brain anatomy of reptiles and mammals. (12)

5. (a) Compare the anatomy of digestive tract among amniotes. Draw required diagrams also. (6)

(b) Classify and give functions of various types of receptors found in vertebrates. (6)

6. (a) Explain the anatomy of avian lung with the help of diagrams and give the mechanism of respiration in birds. (6)

(b) Describe the structure of integument in vertebrates. Draw appropriate diagrams also. (6)

7. Write the short notes on **any three** of the following: (3 x 4 = 12)

(a) Internal ear

(b) Accessory Respiratory organs

(c) Visceral arches

(d) Scales in fishes

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(21) **Your Roll No.** 2023

Sr. No. of Question Paper : 4690 **E**

Unique Paper Code : 32231402

Name of the Paper : Animal Physiology: Life Sustaining Systems

Name of the Course : **B.Sc (Hons.) Zoology**

Semester : IV, LOCF

Duration : 3 Hours Maximum Marks : 75

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Attempt any **FIVE** QUESTIONS in all.
3. Question no. **1** is COMPULSORY.
4. Draw diagrams wherever necessary.

1. (a) Define the following terms : (4)

(i) Stroke Volume

(ii) Plasminolysis

(iii) Ultrafiltration

P.T.O.

(iv) Hering-Breuer reflex

(b) Differentiate between the following : (10)

(i) Cortical and juxtamedullary nephron

(ii) Granulocytes and agranulocytes

(iii) Respiratory acidosis and metabolic acidosis

(iv) Salivary amylase and pancreatic amylase

(v) Tricuspid valve and bicuspid valve

(c) Expand the following abbreviations : (2)

(i) GIP

(ii) ANP

(iii) GFR

(iv) EDV

(d) State the *location* and *function* of the following (**Any FOUR**) : (4)

(i) Podocytes

(ii) Type II alveolar cells

(iii) K cells

(iv) Carotid bodies

(v) Chordae tendineae

(e) Fill in the blanks :– (4)

(i) Respiratory pigment present in the muscle is known as _____

(ii) Facultative reabsorption of water occurs only in the _____ of kidney.

(iii) Gastrin stimulates the secretion of _____

(iv) The chamber of the heart with thickest myocardium is _____

(f) Draw a detailed structure of nephron. (3)

2. (a) Discuss in details the mechanism of oxygen transport in blood.

(b) Comment on Oxygen-hemoglobin dissociation curve. (8,4)

3. (a) Discuss the hormonal regulation of tubular reabsorption and secretion.

(b) Explain the pathway of renal blood supply. (8,4)

4. (a) Describe the extrinsic and intrinsic pathway of blood clotting.

(b) What is cardiac output? Explain the factors that regulate stroke volume. (8,4)

5. (a) Give a detailed account of mechanical and chemical digestion in the stomach.

(b) Write a note on the portal triad. (9,3)

6. (a) Describe the events of the cardiac cycle, along with the diagrams.

(b) Explain the components of a normal ECG. (9,3)

7. Write short notes on Any **THREE** of the following : (3×4=12)

(a) Structure and functions of haemoglobin

(b) Juxtaglomerular apparatus

(c) Coronary circulation

(d) Chloride shift

(e) Absorption of carbohydrates in small intestine.