

- (b) Give evidence to support the claim that integument is a "jack of all trades."
(5)

7. Write the short notes on any **three** of the following:
(15)

- (a) Internal ear
(b) Accessory Respiratory organs
(c) Jaw suspension
(d) Scales in fishes

(1000)

[This question paper contains 4 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 4069

H

Unique Paper Code : 2232012401

Name of the Paper : DSC - Comparative
Anatomy of Vertebrates

Name of the Course : **B.Sc. (H) Zoology-UGCF**

Semester : IV - NEP

Duration : 2 Hours

Maximum Marks : 60

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Attempt **any four** questions including **Question No. 1** which is compulsory.
3. Draw well-labelled diagrams wherever necessary.

1. (a) Define the following (any four): (4)

(i) Meninges

(ii) Procoelous

P.T.O.

- (iii) Archinephros
 - (iv) Holocrine
 - (v) *Arbor vitae*
- (b) Distinguish between the following (any two): (4)
- (i) Single circuit and Double circuit circulation
 - (ii) Holobranch and Hemibranch
 - (iii) Contour and Down feathers
 - (iv) Monocondylic and Dicondylic skull
- (c) State exact location and function of the following (any three): (3)
- (i) Gill raker
 - (ii) Jacobson's organ
 - (iii) Parotoid gland
 - (iv) Femoral gland
- (d) State whether following statements are true or false: (4)
- (i) Adult birds only have left aortic arch.

- (ii) Intervertebral discs are found in mammals.
 - (iii) Craniostylic jaw suspension is found in fishes.
 - (iv) Gizzard is the part of bird stomach.
2. With the help of appropriate diagrams, discuss in detail the evolution of the heart in vertebrates. (15)
3. (a) Describe the evolutionary change in the pattern of urinogenital ducts in amniotes. (8)
- (b) Discuss the various types of uteri found in mammals with the help of suitable diagrams. (7)
4. (a) What are cranial nerves? Tabulate the mammalian cranial nerves and explain their functions. (11)
- (b) Draw a well-labelled diagram avian brain. (4)
5. (a) Describe the dentition in mammals. (7)
- (b) Classify and give functions of various types of receptors found in vertebrates. (8)
6. (a) Describe the air sacs in birds and how does it improve the efficiency of respiration in birds. (10)