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[This question paper contains 4 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 5780

E

Unique Paper Code : 42231202

Name of the Paper : Comparative Anatomy and
Developmental Biology of
Vertebrates

Name of the Course : BSc. (P) Life Sciences,
Theory Exam, May-June
2023

Semester : II, CBCS, OC

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. **Question No. 1** is compulsory. There are two sections, **Section A and B**. Attempt **two** questions from each section. Attempt **five** questions in all.

1. (a) Define the following terms (6)
 - (i) Monophyodont Dentition
 - (ii) True stomach

P.T.O.

- (iii) Antlers
- (iv) Fertilization
- (v) Gastrulation
- (vi) Phonoreceptor

(b) Differentiate between the following terms: - (10)

- (i) Monocondylic and Dicondylic skull
- (ii) External and Internal fertilization
- (iii) Epidermal and Dermal derivatives
- (iv) Blastula and Gastrula
- (v) Bolus and Chyme

(c) Fill in the blanks:

(5)

- (i) The tongue of mammals is attached to buccal floor by a ligament called _____.
- (ii) Poison glands of snake are modified _____.
- (iii) Slow block polyspermy is achieved by _____ reaction.
- (iv) The process of differentiation of spermatid into spermatozoa is called _____.
- (v) The process of attachment of embryo to the

inside of uterine wall in humans is known as _____.

(d) Match the following (6)

A

- (i) Blastocyst
- (ii) Corpora quadrigemina
- (iii) Placenta
- (iv) Nephrostome
- (v) Chemoreceptors
- (vi) Amnion

B

- (a) Brain
- (b) Extraembryonic membrane
- (c) Inner cell mass
- (d) Tongue
- (e) Nutrition
- (f) Kidney

Section A

- 2. (a) Trace the evolution of lungs in vertebrates (8)
- (b) Write a short note on L.S. syrinx in birds (4)
- 3. Give a detailed account of the evolution of heart in vertebrates, with the help of suitable diagrams. (12)

P.T.O.

4. Write short notes on any three of the following: -
(4, 4, 4)

- (a) Specializations of the alimentary canal
- (b) Dentition in mammals
- (c) Accessory respiratory organs in fishes
- (d) Mammalian brain

Section B

5. (a) Describe the process of gastrulation in frog. (8)
(b) Mention briefly the fate of the three germ layers.
(4)
6. (a) Discuss in detail the mechanism of Oogenesis in mammals (6)
(b) Explain various mechanisms involved by oocyte to prevent polyspermy? (6)
7. Write short notes on any three of the following: -
(a) Implantation of human embryo
(b) Types of Eggs
(c) Neurulation
(d) Embryonic Induction (4, 4, 4)

(500)