

BANKURA UNIVERSITY
Undergraduate End Semester -IV Examination of the A.Y. 2021 - 22
ZOOLOGY

Course ID: 42611

Course Code: SH/ZOOH/401/C-8

Course Title: Comparative anatomy of Vertebrates

Full Marks: 25

Time: 1Hr 15 min

The figures in the right hand side margin indicate marks. Candidates are required to give their answers in their own words as far as practicable.

Answer all the questions.

Unit – I

1. Answer any five of the following questions:

(1 x 5 = 5)

- a. Glands of integumentary origin in amphibians are mucous glands, poison glands; in birds, uropygial glands etc. and in mammals, sweat and sebaceous glands etc. Why these glands are also known as epidermal glands?
- b. During the course of evolution, the quadrate bone of reptiles has been evolved into a quite separate structural and functional components in mammals. What structural components has been formed and what is its function?
- c. Stomach in ruminants may be divided into four chambers namely: rumen, reticulum, omasum, abomasum. Why abomasum is considered as true stomach?
- d. Write down the differences in structure and function of molar teeth in grazing herbivores and predator carnivores.
- e. Fish heart is considered as single circuit. Why it is so?
- f. Both Wolffian duct and Mullerian duct are derivatives of mesonephric duct. What are the functions of Wolffian and Mullerian duct?
- g. In human brain, there exists four ventricles which are connected to each other. What functions are served by these ventricles by connecting to each other?
- h. What do you mean by Ampullae of Lorenzini?

Unit – II

2. Answer any two of the following questions:

(5 x 2 = 10)

- a. Draw a labelled diagram of the mammalian integument and give an account of its epidermal derivatives?
(1+1+3=5)
- b. Give a brief account of the respiratory structures in birds? What is meant by double respiration in birds?
(3+2=5)
- c. Compare the brain of a mammal with that of a reptile. What are the branches of Xth cranial nerve in human beings?
(4+1=5)
- d. Write short notes on (Any two):
(2½ + 2½ = 5)
 - i) Fate of visceral arches in vertebrates
 - ii) Olfactory and auditory receptors in mammals.
 - iii) Accessory respiratory organs in fishes.

Unit – III

3. Answer any one of the following questions:

(10 x 1 = 10)

- a. Give an account of the gradual evolutionary modifications of ventricles in Rohu, Crocodile, Guineapig. How spiral valve helps in separation of the oxygenated blood from deoxygenated one in the amphibian heart? Describe the basic structure of aortic arches in vertebrates with diagram.
(4+2+4=10)
- b. Briefly discuss the succession of kidney development in vertebrates with proper diagrams. What is archinephros? 'Genital system associated with urinary system in vertebrates' – state its evolutionary significance.
(6+2+2=10)
