

**TDC (CBCS) Even Semester Exam., 2019**

**ZOOLOGY**

**( 2nd Semester )**

Course No. : ZOODSC-201T/ZOOGEC-201T

**( Comparative Anatomy and Developmental  
Biology of Vertebrates )**

Full Marks : 50

Pass Marks : 20

Time : 3 hours

*The figures in the margin indicate full marks  
for the questions*

**Answer all questions**

**UNIT—I**

**1. Answer any *three* of the following :                    1×3=3**

(a) What is integument?

(b) Name two glands found in amphibians.

(c) What do you understand by visceral skeleton?

(d) What is Meckel's cartilage?

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2. Answer any *one* of the following : 2
- (a) Enlist the functions of integument in vertebrates.
- (b) State the role of visceral arches in tetrapods.
3. Answer any *one* of the following : 5
- (a) Write briefly about various types of glands found in vertebrates. 5
- (b) What is digital cornification? Describe the different types of digital cornifications found in vertebrates with diagram. 1+4=5

## UNIT—II

4. Answer any *three* of the following : 1×3=3
- (a) What is 'crypts of Lieberkuhn'?
- (b) Name the vertebrate groups in which gizzard is found.
- (c) What is the function of gall bladder?
- (d) What are alveoli?

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5. Answer any *one* of the following : 2
- (a) State the functions of swim bladder in teleost fishes.
- (b) What are the functions of air sacs in birds?
6. Answer any *one* of the following : 5
- (a) Give a comparative account of alimentary canal in vertebrates with diagram.
- (b) Describe briefly the structure and functions of gills in fishes.

## UNIT—III

7. Answer any *three* of the following : 1×3=3
- (a) What are aortic arches?
- (b) What are the different types of kidneys found in vertebrates?
- (c) What is ureter?
- (d) In which vertebrate groups transitional hearts are found?

8. Answer any *one* of the following : 2
- (a) What are the functions of aortic arches in vertebrates?
- (b) What are the types of uterus found in female mammals?
9. Answer any *one* of the following : 5
- (a) Give a brief account of evolution of heart in vertebrates.
- (b) Illustrate briefly the evolution of male urinogenital ducts in vertebrates.

## UNIT—IV

10. Answer any *three* of the following : 1×3=3
- (a) What do you mean by 'nodes of Ranvier'?
- (b) What are mechanoreceptors?
- (c) What is Jacobson's organ?
- (d) What are 'gyri' and 'sulci' in the brain of higher vertebrates?
11. Answer any *one* of the following : 2
- (a) What are the functions of gustatory organs in vertebrates?
- (b) Write a note on classification of receptors based on their location in vertebrate body.

12. Answer any *one* of the following : 5
- (a) Give a comparative account of brain in reptiles, birds and mammals. 5
- (b) Write short notes on the following :  $2\frac{1}{2}\times 2=5$
- (i) Olfactory organ
- (ii) Photoreceptor in vertebrates

## UNIT—V

13. Answer any *three* of the following : 1×3=3
- (a) What is amphimixis?
- (b) What do you understand by holoblastic cleavage?
- (c) What is spermiogenesis?
- (d) Mention the type of placenta found in human.
14. Answer any *one* of the following : 2
- (a) Write a note on the structure of mature egg in mammals.
- (b) State the functions of placenta.

15. Answer any *one* of the following : 5

(a) Describe briefly the process of oogenesis in mammals. 5

(b) What is fertilization? Write briefly about the various events of fertilization with suitable illustrations. 1+4=5

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