TDC (CBCS) Even Semester Exam., 2022

ZOOLOGY

(Honours)

(6th Semester)

Course No. : ZOOHCC–601T

(Developmental Biology)

Full Marks : 50
Pass Marks : 20

Time : 3 hours

The figures in the margin indicate full marks for the questions

SECTION—A

Answer any *ten* of the following questions : 2×10=20

1. Who is considered as the 'father of modern embryology'? Define 'the germ layer theory'.

2. What is morphogenesis? Name two types of movements involved in the process of morphogenesis.

3. What are cytoplasmic determinants?

(Turn Over)

4. Define the process of previtellogenesis in brief.

5. What is polyspermy? What is its significance in the process of fertilization?

6. What is embryonic induction? Name the two basic types of embryonic inductions.

7. Define 'fate maps'. What are its importance?

8. What is implantation? Name the type of implantation in human.

9. Write four important functions of placenta.

10. Define metamorphosis. Name the two basic types of metamorphosis found in animals.

11. What do you mean by 'regeneration'? Name the basic type of reparative regeneration in animals.

12. Define the process of ageing.

13. What is teratogenesis?

14. Write a brief note on the significance of in vitro fertilization in treating sterility.

15. Briefly define the process of amniocentesis.

(Continued)

SECTION—B

Answer any *five* of the following questions : 6×5=30

16. Define biogenetic law in brief. Who proposed the biogenetic law? Briefly discuss the historical perspective of preformation theories in embryology. 1+1+4=6

17. Write short notes on any *two* of the following : 3×2=6
    (a) Mosaic theory of embryology
    (b) Spemann's theory of organizers
    (c) Basic concept of cytoplasmic determinants

18. Define the term 'blastulation'. Discuss the methods used for preparation of fate maps. 1+5=6

19. Classify animal eggs based on the amount and distribution of yolk with suitable examples. 3+3=6

20. Write short notes on any *two* of the following : 3×2=6
    (a) Extraembryonic membranes in chick
    (b) Fate of the three germ layers
    (c) Functions of allantois in mammal

(Turn Over)

21. What type of placenta is found in human? Discuss the types of placenta on histological basis. Answer with proper illustrations. 1+5=6

22. Write in detail about the hormonal regulation of metamorphosis in amphibians. Add a note on its importance. 4+2=6

23. Discuss the various theories of ageing.

24. Describe the genetic basis of teratogenesis in animals.

25. Write short notes on any *two* of the following : 3×2=6

(a) Steps of in vitro fertilization

(b) Embryonic stem cell (ESC)

(c) Teratogenic agents

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