



**2023/TDC (CBCS)/EVEN/SEM/
ZOOHCC-601T/262**

TDC (CBCS) Even Semester Exam., 2023

**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 : $2 \times 10 = 20$

- 1. What is embryogenesis? Define blastogenesis.**
- 2. What are morphogens? Name two types of morphogens.**
- 3. Write the epigenetic theory of embryology.**



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4. Define the term 'spermiogenesis'. Add a note on the significance of the process of spermatogenesis.
5. Define cleavage. What are determinate and indeterminate cleavages?
6. Write a short note on organizers.
7. Mention the significance of fate maps.
8. Name the extra-embryonic membranes in birds, and also mention at least one function of each membrane.
9. Define placenta. Name two basic types of placentas found in mammals.
10. Name the two basic types of metamorphosis found in animals. Mention the importance of metamorphosis in nature.
11. Define epimorphic and morphallactic regeneration in animals.
12. Define the process of ageing.
13. What do you understand by genetic teratogenesis in animals?

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(Continued)

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14. Define gamete-intrafallopian transfer (GIFT).
15. Write about the biological significance of stem cells.

SECTION—B

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

16. Who is regarded as the 'founder of the science of embryology'? Discuss the germplasm theory of embryology in detail. 1+5=6
17. Write short notes on any *two* of the following : 3×2=6
 - (a) Phases of development in an organism
 - (b) Biogenetic law
 - (c) Cytoplasmic determinants and its role
18. Describe with well-illustrated diagram, the major events that occur in the process of fertilization.
19. What are fate maps? Discuss the different techniques involved in the construction of fate maps. Add a note on the importance of fate maps in biology. 1+4+1=6

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(Turn Over)



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20. Write short notes on any *two* of the following : $3 \times 2 = 6$
- (a) Implantation of embryo in humans
 - (b) Fate of germ layers
 - (c) Histological types of placenta
21. What are extra-embryonic membranes? Discuss the extra-embryonic membranes in mammals with proper illustration. $1 + 5 = 6$
22. Define metamorphosis. Describe the process of metamorphosis in insects with illustration. $1 + 5 = 6$
23. Discuss the modern theories of ageing.
24. Write short notes on any *two* of the following : $3 \times 2 = 6$
- (a) In vitro fertilization
 - (b) Amniocentesis
 - (c) Applications of embryonic stem cells
25. Discuss in detail the different environmental factors which can act as teratogenic for different organisms.

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