

Roll No.

Total Pages : 2

CMDQ/M-24

5606

DEVELOPMENTAL BIOLOGY

Paper–M–Z–401

Time Allowed : 3 Hours]

[Maximum Marks : 80

Note : Attempt **five** questions in all, selecting **one** question from each Unit. Question No. **1** is compulsory. All questions carry equal marks.

Compulsory Question

1. Explain the following questions : 8×2=16
- | | |
|---------------------------------|--------------------|
| (i) Fate maps. | (ii) Gastrulation. |
| (iii) Cytoplasmic determinants. | (iv) Delamination. |
| (v) Teratogenesis. | (vi) Bicoid. |
| (vii) SRY gene. | (viii) Allometry. |

UNIT-I

2. Give a comparative account of Cleavage pattern in vertebrates. How yolk determines the type of Cleavage? 16
3. Write short notes on the following :
- | | |
|--|---|
| (a) Developmental patterns of Metazoans. | 8 |
| (b) Mesoderm and Endoderm development. | 8 |

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UNIT-II

4. Write a detailed note on proximate tissue interaction. How sequential inductive interactions leads to eye formation? 16
5. Explain briefly :
- | | |
|-----------------------------------|---|
| (a) Cell specification fate. | 8 |
| (b) Body axis formation in birds. | 8 |

UNIT-III

6. What is Programmed cell death and its types. Explain its mechanisms and significance in developmental biology. 16
7. Briefly describe :
- | | |
|---|---|
| (a) Metamorphosis in insects. | 8 |
| (b) Temperature and Location dependent Sex determination. | 8 |

UNIT-IV

8. Describe the Homeobox concept in Blood cell formation. 16
9. Write short notes on the following :
- | | |
|--|---|
| (a) Environmental cues and its effects on development. | 8 |
| (b) Skeletal muscle regeneration. | 8 |

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