

Q.P. Code – 56944

Previous M.Sc. Degree Examination

OCTOBER/NOVEMBER 2014

(Directorate of Distance Education)

Zoology

(DPA 540) Paper IV – CYTOGENETICS AND DEVELOPMENTAL BIOLOGY

Time : 3 Hours]

[Max. Marks : 75/85

Instructions to Candidates :

- 1) Answer any **TWO** questions from Section-A, **TWO** from Section-B and Section-C is **compulsory**.
- 2) Illustrate the answers wherever necessary.
- 3) Section-D is applicable to only freshers.

SECTION – A

2 × 15 = 30

1. Explain cell cycle and its phases.
2. What is linkage? Describe the different methods of construction of linkage map.
3. Discuss the sex determination in *Drosophila*.
4. Explain the fine structure of gene.

SECTION – B

2 × 15 = 30

5. Describe the maternal genes and their role in early embryonic development.
6. What is nuclear transplantation? Elucidate the role of nucleus in development.
7. Write in detail the developmental patterns of metazoans.
8. Explain the process involved in early vertebrate development.

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SECTION – C

9. Answer any **THREE** of the following :

3 × 5 = 15

- (a) Gap genes
- (b) Competence
- (c) Split genes
- (d) Fate maps
- (e) Ultra structure of plasma membrane

SECTION – D

1 × 10 = 10

10. Explain the extra chromosomal inheritance with suitable examples.
