

20. (a) Discuss the medical implications of development biology.

Or

- (b) Explain about the environmental assaults on human development.

SECTION C — ($3 \times 10 = 30$)

Answer any THREE questions.

21. What is cell adhesion molecule? Explain about the roles of different cell adhesion molecules.
22. Detail account on post fertilization process occurring in ovum.
23. Explain – limb development and regeneration in vertebrates.
24. Illustrate the organisation of floral meristems and floral development in Antirrhinum.
25. Describe the relationship between development and evolution.
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S.No. 2601

P 22 BTE 1 B

(For candidates admitted from 2022 – 2023 onwards)

M.Sc. DEGREE EXAMINATION, NOVEMBER 2022.

Biotechnology – Elective

DEVELOPMENTAL BIOLOGY

Time : Three hours

Maximum : 75 marks

SECTION A — (20 marks)

Answer ALL questions.

- I. (A) Multiple choice questions ($5 \times 1 = 5$)
1. Which one of the following is found only in plants?
- (a) Tight junctions (b) Gap junction
- (c) Desmosomes (d) Plasmodesmata
2. Which of the following do not belong to the group?
- (a) Chemotaxis (b) Ovulation
- (c) Synchrony (d) Proximities

3. Asymmetry between reciprocal crosses is seen in ?
- Pleiotropy
 - Interaction of genes
 - Autosomal inheritance
 - Sex linked inheritance

4. Which of the following growth hormones produces apical dominance?

- Auxin
- Ethylene
- Cytokinin
- Gibberellin

5. Prenatal diagnosis is not applicable for

- Gardner syndrome
- Hunter syndrome
- Multiple endocrine neoplasia
- All of the above

- (B) Fill in the blanks (5 × 1 = 5)

6. _____ is a calcium dependent transmembrane glycoprotein.

7. Movement of cells leading to blastula formation is called _____

8. Neoblasts formation during regeneration is observed in _____

9. The _____ part of the plant is free from the attack of the virus.

10. Down syndrome is due to trisomy of _____ chromosome.

- II. Explain following type questions (5 × 2 = 10)
- Integrins
 - Morula
 - Regeneration
 - phyllotaxy
 - Genetic disorders

SECTION B — (5 × 5 = 25)

Answer ALL questions, choosing either (a) or (b).

16. (a) Make a note on genomic equivalence.

Or

- (b) Explain the principles of cell - cell communication in development.

17. (a) Give a short note on egg membrane and types.

Or

- (b) How does the genetic regulation involved in embryonic development?

18. (a) Give an account on post embryonic larval formation.

Or

- (b) Briefly explain the environmental regulation of normal development

19. (a) Enumerate the organisation of root apical meristems in plant.

Or

- (b) Give a brief account on leaf development in plants.