

**B.Sc.-M.Sc. INTEGRATED (BIOTECHNOLOGY)
SEMESTER III, ONLINE SUPPLEMENTARY
EXAMINATION, SEPTEMBER 2021
PAPER CODE - BBT-GE03TH**

PAPER TITLE: DEVELOPMENTAL BIOLOGY

Time: Three Hours

Maximum Marks: 75

Attempt all questions. Use only A4 sheets. All parts of a question must be attempted in continuation. Start answer of a fresh question on a new page. Cite examples and draw labelled diagrams wherever necessary.

Question No. 1.

Explain briefly the following terms

[1 x 15 = 15]

- | | | |
|---------------------------|--------------------------|--------------------------|
| I. Meiosis | II. Mitosis | III. Spermiogenesis |
| IV. Polar body | V. Graffian follicle | VI. Polyspermy |
| VII. Rheotaxis | VIII. Sperm Capacitation | IX. Ooplasm |
| X. Blastocoel | XI. Micromeres | XII. Triploblasts |
| XIII. Genomic equivalence | XIV. Bicoid | XV. Reciprocal Induction |

Question No. 2.

Give an account on any three of the following:

[5 x 3 = 15]

- Preformation and Epigenesis.
- Spermatogenesis
- Major events during Fertilization
- The Acrosome Reaction
- Polyspermy Block

Question No. 3.

Answer any one of the following questions.

[15 x 1 = 15]

- Explain the process of cleavage along with different patterns of cleavage. Give an account of cleavage followed by Frog embryo.

OR

- Explain in detail the major cell movements during process of Gastrulation.

Question No. 4.

Answer any one of the following questions:

[15 x 1 = 15]

- a) Explain three major strategies of cellular specification. Discuss Roux's attempt to demonstrate autonomous specification.

OR

- b) Describe various levels of Gene expression regulation.

Question No. 5.

Answer any one of the following questions:

[15 x 1 = 15]

- a) Explain the process of vertebrate eye development by induction.

OR

- b) Describe the process of Neurulation in detail with appropriate diagrams.

It should be noted that 60 minutes extra time will be provided to scan your answer sheets, build a PDF and mail it to biotechnologyexam2020@gmail.com

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