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5. (a) Give an account of the assembly and functions of microtubules.
- (b) Explain the secretory pathway of endomembrane system in cell. (6,9)
6. Write short notes on **any three** of the following:
- (a) Pattern of cleavage
- (b) Acrosome reaction
- (c) Lysosome
- (d) Active transport
- (e) Nerve cell (5,5,5)

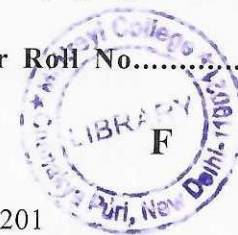
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[This question paper contains 4 printed pages.]

Your Roll No.....

21 JUL 2023

Sr. No. of Question Paper : 1274



Unique Paper Code : 2232521201

Name of the Paper : Cell and Developmental Biology of Animals

Name of the Course : **B.Sc. Life Sciences**

Semester : II

Duration : 2 Hours

Maximum Marks : 60

**Instructions for Candidates**

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Attempt any four questions in all including Question No. 1 which is compulsory.
3. Draw well-labelled diagrams whenever necessary.
4. Parts of questions to be attempted together.

1. (a) Define the following terms (any four). (4)

(i) Metamorphosis

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(ii) Nebenkern

(iii) Polar Body

(iv) Blastopore

(v) Cell theory

(vi) Stem cells

(b) Differentiate between the following (any four):

(8)

(i) Protoplast and protoplasm

(ii) Gap junction and tight junction

(iii) Embryogenesis and blastogenesis

(iv) Parturition and hatching

(v) Sertoli cell and interstitial cell

(vi) Telolecithal And Centrolecithal eggs

(c) Give the contribution of the following scientists in the field of cell and developmental biology (any three). (3)

(i) Robert Hook

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(ii) Purkinje/Huxley

(iii) Singer and Nicolson

(iv) Spemann

(v) August Weisman

2. (a) Define plasma membrane. Describe the various models of plasma membrane.

(b) Explain how "prevention of polyspermy" take place. (9, 6)

3. (a) What is a cell cycle. Describe its various phases.

(b) Give an account of somatic cell division along with diagrams. (5, 10)

4. (a) Describe various stages and process of spermatogenesis.

(b) Give a brief account of different types of morphogenetic movements occurring during gastrulation. (8, 7)

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