

This question paper contains 3 printed pages]

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S. No. of Question Paper : 5973

Unique Paper Code : 2232521201

Name of the Paper : Cell and Development Biology of Animals

Name of the Course : B.Sc. (P) Life Sciences

Semester : II

Duration : 2 Hours

Maximum Marks : 60

*(Write your Roll No. on the top immediately on receipt of this question paper.)*

Draw well labelled diagrams wherever required.

Attempt *four* questions in all, including

Question No. 1 which is compulsory.

*All* parts of a question to be attempted together.

1. (a) Define the following terms (any *four*) :

4

(i) Capacitation

(ii) Tight junctions

(iii) Gastrulation

(iv) Fate maps

(v) Epigenesis.

P.T.O.

- (b) Differentiate between (any *three*) : 6
- (i) Meiosis and Mitosis
  - (ii) Spermatist and Ovist
  - (iii) Gastrula and Neurula
  - (iv) Autocrine and Paracrine signaling.
- (c) Name the germ layers from which the following are derived : 5
- (i) Lung
  - (ii) Brain
  - (iii) Pancreas
  - (iv) Liver
  - (v) Kidney.
2. (a) Describe the process of spermatogenesis in mammals with the help of well labelled diagrams. 10
- (b) Add a note on morphogenetic movements. 5
3. (a) Describe the major morphological and physiological changes during metamorphosis in amphibians. Give a detailed account of hormonal regulation of metamorphosis in amphibian. 10
- (b) Briefly describe cortical reaction and its role in blocking polyspermy. 5

4. (a) What is the importance of checkpoints in cell cycle ? Give an account of the role of various Cdk-Cyclins during cell cycle regulation. 10
- (b) Explain how Prophase I is different from Prophase II. What do you understand by reductional division ? 5
5. (a) Describe Gastrulation in chick. What is the importance of primitive streak and Hensen's node ? 10
- (b) Describe the different types of tissues and their roles in the body. 5
6. Write short notes on any *three* of the following : 5,5,5
- (a) Planes and pattern of cleavage
- (b) Extra embryonic membrane in birds
- (c) Types of Egg
- (d) Von-Baer Laws.