U.G. 2nd Semester Examination - 2022

Molecular Biology & Biotechnology

[HONOURS]

Course Code : MBBT-H-202-T-CCR-4

(Developmental Biology)

Full Marks : 40 Time : $2\frac{1}{2}$ Hours

The figures in the right-hand margin indicate marks.

Candidates are required to give their answers in their own words as far as practicable.

1. Answer any **five** from the following questions: 2×5=10

   a) What is conditional specification?

   b) When is the prospective potency of a blastomere is more than its prospective fate?

   c) State the function of allantois.

   d) What is acrosome reaction?

   e) Explain the concept of 'Fate map'.

   f) Ectoderm gives rise to skin as well as nerve tissues. Name the proteins responsible for such differentiation.

   g) What is chordoma?

   h) What is spermateleosis?

2. Answer any **two** of the following: 5×2=10

   a) Describe the process of development of eye with suitable diagram.

   b) Mention the laws governing the cleavage pattern in egg. Differentiate between holoblastic and meroblastic cleavage. 3+2

   c) Mention different placental types with examples based on the involvement of embryonic tissues.

   d) Describe the process of gsstrulation in frog.

3. Answer any **two** of the following: 10×2=20

   a) Describe the process of oogenesis with special reference to the meiotic divisions involved in it. State the events occurring during slow block to polyspermy. 7+3

   b) Explain the process of formation of notochord with diagram. What is the fate of the notochord in vertebrates? Name two neural tube defects that occur due to failure of closure of neuropores. 6+2+2

c) Describe 'Epigenetic Landscape' model. How embryonic induction is regulated at the transcriptional and translational level? 5+5

d) Give a detailed account of different types of morphogenetic movements. What are the fates of three primary germ layers in vertebrates? 7+3

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