

**U.G. 2nd Semester Examination - 2021****Molecular Biology & Biotechnology****[HONOURS]****Course Code : MBBT-H-202-T-CCR-4****(Developmental Biology)**

Full Marks : 20

Time : 1 Hour

*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:

1×5=5

- What is the significance of fate map?
- What is the fate of three primary germ layers?
- How CSF enters the venous system above the brain?
- State the role of amnion.
- What is cellular commitment?
- State the importance of Nieuwkoop center.
- What is meroblastic cleavage?
- Why Grey crescent is so important in the embryonic development?

*[Turn over]*2. Answer any **one** of the following: 5×1=5

- Differentiate between fast and slow block to polyspermy and explain their significance in the process of fertilization.
- When is the prospective potency of a blastomere more than its prospective fate? Explain with example the concept of conditional specification.  $2\frac{1}{2}+2\frac{1}{2}$
- What is neural induction? Mention the processes by which gene expression is controlled at the epigenetic level. 1+4

3. Answer any **one** of the following: 10×1=10

- State the similarities and dissimilarities between spermatogenesis and oogenesis with special reference to the chromosomal segregation pattern. Mention the laws governing the cleavage pattern in egg. 7+3
- Describe the process of development of brain in human. Explain with example the different types of placenta found in mammals. 5+5
- What is a morphogen? State the difference between epiboly and emboly. Describe the process of gastrulation in chick. 2+2+6