

FIVE-YEAR INTEGRATED M. Sc. EXAMINATION 2021-2022

SEMESTER - V

Course: LS-3-5-5

(Developmental Biology)

Time: Three hours

Full marks: 40

Questions are of value as indicated in the margin.

Answer Question No. 1 and any three from the rest.

1. Write short notes on **any ten** of the following 10x1=10

- a) Conditional specification
- b) Grey crescent
- c) TDF
- d) Block of polyspermy
- e) Fertilization membrane
- f) Capacitation of sperm.
- g) Acrosomal reaction
- h) Pluripotent stem cell
- i) Cortical reaction
- j) Manchette.
- k) Competence of tissue

2. (a) Describe the process of spermeiogenesis.

(b) What is genomic equivalence?

Give evidence on cloning experiment of adult vertebrate (sheep).

5+(1+4) = 10

3. (a) Classify stem cell.

(b) Classify different types of specifications of embryonic tissue.

5+5 = 10

4. (a) What is fate map in frog? (b) Describe the events during gastrulation in frog.

2+8 = 10

5. (a) How embryonic dorso-ventral axis in *Drosophila* is determined by dorsal protein?

(b) Explain the role of hunchback, caudal, bicoid and nanos protein in the determination of anterior-posterior axis.

5+5 = 10