

(2 ½ Hours)

Total Marks: 75

- N.B.:** 1) All questions are compulsory.
2) Figures to the right indicate full marks for the question.
3) Draw neat and labeled diagrams wherever necessary.

Q.1. A) Answer any one of the following: (08)

- Give a detailed account of life cycle of Zebra Fish
- Describe Life Cycle of *Drosophila*. Discuss why it is known as Genetic tool.

Q.1 B) Answer any one of the following: (07)

- Double Fertilization and embryo development in Arabidopsis.
- Explain the role of Homeotic genes specifying the parts of Arabidopsis flower.

Q.2. A) Answer any one of the following: (08)

- Define neural crest cells. How they are formed and why they are called fourth germinal cells
- With the help of suitable diagrams explain the process of Gastrulation in Chick.

Q.2 B) Answer any one of the following: (07)

- Explain the derivatives of Neural crest cells
- With reference to Amphibian development explain cleavage , morula and blastula formation.

Q.3. A) Answer any one of the following: (08)

- Describe the various lobes of the brain with reference to motor areas
- Describe in detail the various types of invertebrate nervous systems

Q. 3. B) Answer any one of the following: (07)

- Give a detail account on comparison between sympathetic and parasympathetic nervous system
- Describe the internal structure of the spinal cord

Q.4. A) Answer any one of the following: (08)

- Describe the structure and function of the various types of glial cells in the nervous system
- Using a suitable diagram describe the neuromuscular junction and muscle contraction

Q. 4. B) Answer any one of the following: (07)

- Differentiate between chemical and electrical synapses
- Biosynthesis and physiological role of Acetylcholine

Q.5 Write short note on: (Any three) (15)

- Blocks to Polyspermy
- Sea Urchin as an experimental model for Developmental biology
- Enlist the major tissues form from ectoderm, mesoderm and endoderm.
- Innate behaviour
- Sodium potassium pump
- GABA
