



বিদ্যাসাগর বিশ্ববিদ্যালয়

VIDYASAGAR UNIVERSITY

M.Sc. Examinations 2020

Semester IV

Subject: ZOOLOGY

Paper: ZOO- 402

(Theory)

Full Marks: 40

Time: 2 hrs.

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

Group-A (Developmental Biology)

1. Answer one question of the following:

- Describe briefly the set of physiological and molecular changes by which sperm become competent to fertilize the egg in mammal.
- What is the role of calcium ion in activation of sea urchin egg ?
- Comment on the role of Retinoic acid in *Xenopus* regeneration using a chimeric receptor.
- Explain the events for mesoderm induction and organizer formation by the interaction of beta- catenin and TGF-beta proteins with the help of a suitable model.

Group-B (Neuroendocrinology)

2. Answer one question of the following:

- Draw and describe a typical Synapse. Write a detail note on Neurotransmitter.
- State a comparative account of invertebrate nervous system.
- Describe the structure of olfactory neuroepithelium of a vertebrate animal.
- Write the notes on: i) Types of neuron in human retina ii) neuroendocrine hormones.