

ZOOLOGY

PAPER- III
DEVELOPMENTAL BIOLOGY

Duration : 3 hours

M.M. 50

UNIT -I

- 1 Aim and scope of developmental biology. Historical review and concepts of Embryology.
- 2 Sexual and asexual reproduction.
- 3 Neuroendocrine regulation of reproductive organs (hypothalamo-hypophysial axis only).

UNIT -II

- 4 Gametogenesis: Spermatogenesis and structure of sperm, oogenesis and structure of ovum, types of ova.
- 5 Fertilization: Events of fertilization, mechanism of sperm transfer, polyspermy and its preventive mechanisms.
- 6 Errors in fertilization and significance of fertilization.
- 7 Parthenogenesis.

UNIT - III

- 8 Cleavage: Patterns and planes of cleavage.
- 9 Blastulation: Types of blastula.
- 10 Gastrulation: Types, mechanism, fate maps, morphogenetic cell movements and their significance in gastrulation.

UNIT -IV

- 11 Elementary knowledge of primary organizer.
- 12 Embryonic induction, concept of competence.
- 13 Determination, differentiation and growth.
- 14 Regeneration.

UNIT -V

- 15 Extra embryonic membranes: Development and functions.
- 16 Placentation: Definition, types, classification on the basis of morphology and histology. Functions of placenta.