

1238

ZOOLOGY

PAPER- III : DEVELOPMENTAL BIOLOGY

Duration : 3 hours

M.M. 50

UNIT -I

- 1 Aims and scope of developmental biology. Brief historical review and concepts of Embryology.
- 2 Neuroendocrine regulation of reproductive organs in brief.
- 3 Gametogenesis: Spermatogenesis and structure of sperm, oogenesis and structure of ovum, types of ova.

UNIT -II

- 4 Fertilization: Main events of fertilization, acrosome reaction, polyspermy preventing mechanisms.
- 5 Errors in fertilization and significance of fertilization. Parthenogenesis (In brief)
- 6 *In vitro* fertilization and test tube baby.
- 7 Embryo transplant.

UNIT -III

- 8 Cleavage: planes, patterns & types of cleavage.
- 9 Blastulation: Types of blastulae.
- 10 Gastrulation: fate maps, morphogenetic movements and their significance in gastrulation. Mechanism and main characteristic of gastrulation.

UNIT -IV

- 11 Elementary knowledge of fate of three germ layers.
- 12 Primary organizer and embryonic induction, concept of competence.
- 13 Determination, differentiation; Main characteristics of growth and regeneration.
- 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.