

Theory

Introduction: Principal features of development, origin of sexual reproduction, developmental patterns; Spermatogenesis; Oogenesis; Fertilization: Recognition of sperm and egg, fusion of gametes, activation of egg metabolism, rearrangement of egg cytoplasm; Cleavage: Patterns of embryonic cleavage, mechanism of cleavage; Gastrulation: Fate maps, gastrulation in sea urchin, amphibians, birds and mammals. Early Vertebrate Development: Neurulation, ectoderm, mesoderm and endoderm.

Practicals

Study of structure of gametes in some representative cases, i.e., frog, fish, fowl and mammal. Study of cleavage and subsequent development from prepared slides and/or whole mounts in various animals i.e., frog, chick etc.

Books Recommended:

1. Scott F. Gilbert. 2008-onward. Developmental Biology, Sinauer Associates Inc., Publishers, Massachusetts.
2. Bruce M. Carlson. 2000. Human Embryology and Developmental Biology, Mosby, London.
3. Balinsky, B.I. 1985. An Introduction to Embryology, W.B. Saunders, New York.