

K. T. S. P. Mandal's
Hutatma Rajguru Mahavidyalaya, Rajgurunagar.
Department of Zoology
Teaching Plan (A.Y.2022–2023)

T.Y. B. Sc. (Zoology)
Course Title: Developmental Biology
Course code: ZO 355

| Sr. No | Month | Topics | Teacher |
|---------------|-----------------|--|----------------|
| 1 | Sept | 1. Fundamentals of Developmental Biology: 1.1 Definition and scope. 1.2 Concepts in Developmental Biology: Growth, Differentiation, Dedifferentiation, Cell determination, Cell communication, Morphogenesis, Induction and Regeneration. | DRB |
| 2 | Sept | 2. Theories of Developmental Biology: 2.1 Preformation. 2.2 Pangenesis. 2.3 Epigenesis. 2.4 Axial gradient. 2.5 Germplasm. | DRB |
| 3 | Oct | 3. Gametogenesis: 3.1 Spermatogenesis & Structure of sperm with respect to human. 3.2 Oogenesis & Structure of ovum with respect to human. 3.3 Types of eggs. | DRB |
| 4 | Oct | 4. Fertilization: 4.1 Concept and types. 4.2 Chemotaxis. 4.3 Sperm penetration: Acrosome reaction, Capacitation & Decapacitation. 4.4 Activation of ovum: Fertilization cone. 4.5 Prevention of polyspermy: Fast block & Slow block. 4.6 Significance of fertilization. | DRB |
| 5 | Oct & Nov | 5. Cleavage and Blastula: 5.1 Planes and symmetry of cleavage. 5.2 Types of cleavage. 5.3 Significance of cleavage. 5.4 Definition and types of Blastula. | DRB |

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| 6 | Nov | 6. Gastrulation: 6.1 Definition and Concept. 6.2 Basic cell movements in gastrulation: Epiboly, Emboly, Convergence, Invagination, Ingression & Involution with reference to frog. 6.3 Concept of Organizer : Primary, Secondary and Tertiary. | DRB |
| 7 | Nov | 7. Chick Embryology: 7.1 Structure of Hen's egg. 7.2 Fertilization and cleavage in Chick. 7.3 Formation of primitive endoderm. 7.4 Primitive streak development. 7.5 Head process and regression of Primitive streak. | DRB |

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