

Govt. College, Ropar

Department of Zoology

Class B.Sc. 3rd Sem.5

Session : 2021-22

Developmental Biology and Genetics

Week	Lesson scheduled
1 st	Gametogenesis with particular reference to differentiation of spermatozoa : vitellogenesis, role of follicle/ subtesticular cells in gametogenesis.
2 nd	Egg maturation : egg membranes, polarity of egg.
3 rd	Fertilization; parthenogenesis, Cleavage patterns.
4 th	Basic concepts of organizers and inducers and their role.
5 th	Embryonic development: Cleavage, determination and differentiation, development upto three germ layers and their fate in <i>Herdmania</i> , <i>Amphioxus</i> , frog, .
6 th	Embryonic development: Cleavage, determination and differentiation, development upto three germ layers and their fate in chick and rabbit. Metamorphosis in <i>Herdmania</i> and Rana (Frog).
7 th	Foetal membranes, their formation and role. Mammalian placenta, its formation, types and functions.
8 th	> MST
9 th	> Mst
10 th	Modification of Mendelian ratios : Non-allelic gene interaction, Modified F ₂ ratios (9 : 7, 9 : 3 : 4, 12 : 3 : 1, 13 : 3)
11 th	Modification of Mendelian ratios : Non-allelic gene interaction, Modified F ₂ ratios (15 : 1, 9 : 6 : 1). Gene modifications due to incomplete dominance, lethal factors (2:1), Pleiotropic gene.
12 th	Multiple Alleles – Blood group inheritance, eye colour in <i>Drosophila</i> , pseudo-allelism.
13 th	Multiple factors : Qualitative and quantitative characters, Inheritance of quantitative traits (skin colour in man).
14 th	Extranuclear inheritance : Chloroplast with special reference to <i>Mirabilis jalapa</i> and Kappa particles in <i>Paramecium</i> .
15 th	Population Genetics : Equilibrium of gene frequencies and Hardy Weinberg Law.
16 th	Genetic recombination in bacteria (conjugation, transduction and transformation),
17 th	Recombinant DNA –technology, Genetic cloning and its applications in medicine and agriculture, DNA finger printing.



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Department of Botany

Class B.Sc. 6th Sem.

(Session 2021-22)

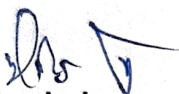
Medical zoology and medical lab technology


Week	Lesson scheduled
1 st	➤ Introduction to Parasitology (pertaining to various terminologies in use).
2 nd	➤ Brief accounts of life history, mode of infection and pathogenicity of the various pathogens with reference to man; prophylaxis and treatment:
3 rd	➤ Pathogenic protozoans: Entamoeba, Trypanosoma, Leishmania
4 th	➤ Pathogenic protozoans: Giardia, Trichomonas and Plasmodium.
5 th	➤) Pathogenic helminthes: Fasciolopsis, Schistosoma, Echinococcus, Ancylostoma,
6 th	➤) Pathogenic helminthes: Ancylostoma, Trichinella, Wuchereria, Dracunculus and Oxyuris.
7 th	➤ Life cycle and control measures of arthropod vectors of human diseases: Haemorrhagic fever (Aedes); Filariasis and Japanese Encephalitis (Culex).
8 th	➤ Life cycle and control measures of arthropod vectors of human diseases: Malaria (Anopheles) Yellow fever and Dengue, (Aedes)
9 th	➤ MST
10 th	➤ MST
11 th	➤ Laboratory techniques: Colorimetry, Microscopy, Autoclaving, Centrifugation, Spectrophotometry.
12 th	➤ Haematology: Collection of blood (Venous and Capillary), Anticoagulants (merits and demerits). Romanowsky's stains.
13 th	➤ Haematology: Total RBC count, Erythrocyte sedimentation rate, TLC. DLC, Eosinophil count, Platelet count, Reticulocyte count.
14 th	➤ Biochemistry: Protein estimation, estimation of blood urea, sugar and cholesterol, serum creatinine and uric acid, urine analysis; test.
15 th	➤ Biochemistry: estimation of protein, sugar, bile salts, bile pigments, ketone bodies; enzyme studies (serum transaminase, phosphatase, amylase and lipase), liver function

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Continued.

16 th	➤ Histopathology: Common fixatives and staining techniques,
17 th	➤ Histochemistry: Principle and method: Staining of carbohydrates, proteins and fats with bromo phenol blue, Periodic acid Schiff, Sudan Black blue and Feulgen reaction
18 th	➤ Histochemistry: Principle and method: Staining of carbohydrates, proteins and fats with bromo phenol blue, Periodic acid Schiff, Sudan Black blue and Feulgen reaction


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