

Department of Zoology
ABN Seal College
Add-on Course
HISTOPATHOLOGY

Syllabus: Add-on Course on Histopathology

Theory:

1. Concepts of microscopy:
 - a) Basic concepts of simple and compound microscopes
 - b) Micrometry, Scaled microscopic drawing and microphotography and post processing
2. Components of histopathology laboratory: Basic concepts and procedures to use
 - a) Hot air oven, water bath
 - b) Microtome, Cryostat
 - c) Centrifuge
 - d) Electronic balance
 - e) Reagents and dyes
3. Laboratory hazards and safety measures: Guideline only
 - a) Types of hazards
 - b) Factors contributing laboratory accidents
 - c) Safety measures
4. Haematopathology:
 - a) Procedures and preparations for blood sample for histopathology and microscopy
 - b) Standard parameters of human blood
 - c) Changed parameters during pathological conditions like haemophilia, leukaemia and lymphoma
5. Histopathology Procedures:
 - a) Types of fixatives used in histopathology: Composition, procedure and Specific features
 - i) Formalin
 - ii) Buffered formal
 - iii) Heidenhainsusa
 - iv) Zenker's fluid
 - v) Carnoy's fluid
 - vi) B5 fixative
 - vii) Bouin's fluid
 - b) Decalcification of tissues
 - c) Stains and dyes used in routine histopathology
 - d) Routine sample preparation techniques
6. Special stains:
 - a) For detection of microorganisms
 - b) Connective tissues and lipids
 - c) Carbohydrates
 - d) Amyloids
 - e) Pigments and minerals
7. Basic concepts of cytological staining:
 - a) PAP staining
 - b) Buccal smear staining
 - c) Fine needle aspiration cell staining

Practical:

1. Scaled drawing of blood parasite/ microorganism and its identification
2. Microphotography of cytological specimen and post processing and its identification
3. TC, DC, ESR, identification of different blood cells
4. Identification of any one parasite from faeces/blood from avian/ mammalian source
5. Preparation of four stained permanent slides of different tissues from goat/pig/mice and identification there of
6. Buccal smear staining and detection of Barr body

Post Graduate Department of Zoology
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Course Outcome

1. After completion of the course the students will be able to set up the simple and compound microscope and see and identify the specimen under the microscope, they will be able to know about the size and structure of the specimen and able to draw the specimen using camera- lucida.
2. After completion of the course the students will be able to identify the basic histological structure of the tissue and the histochemical properties of the cells and tissue. They will be able to describe the nature of the tissue during the normal and different pathological condition.
3. The students will be able to identify the different types of blood cell and able to describe their role in diseased vs normal conditions.
4. The students will be able to identify and isolate the parasites of domestic fowl.