

MEDICAL DIAGNOSTICS

CLASS–XII

LABORATORY MEDICINE–II (741)

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THEORY

Time: 3 Hours

Marks: 60

Unit–1: Investigation Urine & Faces Analysis

10

- Introduction.
- Maintenance & Equipments of Pathology Lab.
- Preparation of Reagents.
- Urine.
- Formation and composition.
- Collection Preservation Gravity & PH.
- Examination–Physical.
- Examination– Chemical.
- Sugar.
- Ketone Bodies, Bile.
- Blood, Crystals.
- Parasites & Abnormal Cells.
- Feces–Formation, Physical & Chemical Examination.
- Preparation of stool sample for microscopic examination.
- Sputum Examination.
- Assessment.

Unit–2: Body Fluids

10

- Body Fluids.
- Cerebro spinal fluid. Synovial fluid and Pleural fluid Pericardial fluids Peritoneal fluids.
- Other fluids collected stransudateor exudates.
- Semen Analysis–Collection, Physical & Chemical examination.
- Sperm count – Microscopic examination & Motility.
- Assessment.

Unit–3: Process & Investigations

10

- Reagents – Preparation and their uses.
- Personnel care and protection Disposal of Bio-Medical waste Smear Making.
- Staining Methods.
- Osmotic fragility test.
- Differential Counts.
- Cellcounts – RBC, WBC, and Platelets Eosinophil & Reticulocyte count ESR.
- LE Cell.
- Haemopoeisis – Erythrocytes Hemoglobin – Estimation Packed Cell Volume, Indices Hematocrit and Red cellindices Anemia.
- Leukocytes.
- Coagulation Factors.

- Coagulation disorders – Bleeding & Clotting Time.
- Bone marrow study.
- Assessment.

Unit-4: Blood Bank & Transfusion

10

- Blood Bank.
- Material & equipment Reagents – preparation Protocols.
- Storage & Preservation.
- Records in Blood bank.
- ABO System.
- Subgroups in ABO System.
- Practical importance of Other blood groups.
- Rh System.
- Antibody titers.
- Blood grouping techniques Problems in blood grouping Donor Motivation.
- Donors election & Registration.
- Blood Collection.
- Storage, Preservation & Processing of blood.
- Quality control.
- Investigation of transfusion, reactions.
- Grouping & cross matching Direct and Indirect Coombs test Mandatory Test.
- Assessment.

Unit-5: Lab Process

10

- Materials, Equipment & Techniques.
- Biopsy, Autopsy.
- Collection, Preservation & Labeling of Slides, Blocks, Specimens.
- Techniques.
- Grossing Methods.
- Fixatives.
- Processing of the tissues including Bone.
- Embedding Section Cutting Staining & Mounting Special Stains.
- Preservation of reports & records.
- Assessment.

Unit-6: Cytology

10

- Techniques Equipment & Procedures – FNAC, Imprints smear.
- Vaginal & Buccal smear, Swabs.
- Staining procedure and Mounting.
- Preparation of fluids for Cytological Examination.
- Immuno histo chemistry.
- Assessment.

PRACTICAL

Time: 2 Hours

Marks: 40

Unit-1: Urine & Feces Analysis

7

- Introduction.
- Maintenance & Equipment of Pathology Lab.
- Preparation of Reagents.
- Urine.
- Formation and composition.
- Collection Preservation Gravity & PH.
- Examination–Physical Examination - Chemical Sugar.
- Ketone Bodies.
- Bile, Blood, Crystals.
- Parasites & Abnormal Cells.
- Feces–Formation, Physical & Chemical Examination Preparation of stool sample for microscopic examination Sputum Examination.
- Assessment.

Unit-2: Body Fluids

7

- Body Fluids.
- Cerebrospinal fluid, Synovial fluid.
- Pleural fluid.
- Pericardial fluids.
- Peritoneal fluids.
- Other fluids collected transudate or exudates.
- Semen Analysis – Collection, Physical & Chemical examination.
- Spermcount – Microscopic examination & Motility.
- Assessment.

Unit-3: Hematology Process & Investigations

7

- Smear Making Staining Methods Osmotic fragility test.
- Differential Counts.
- Cellcounts – RBC, WBC, Platelets.
- ESR.
- LE Cell.
- Hemoglobin – Estimation.
- Hematocrit and Red cell indices.
- Coagulation disorders – Bleeding & Clotting Time.
- Bone marrow study – Demo.
- Assessment.

Unit-4: Blood Bank & Transfusion

7

- Blood Bank.
- ABO Blood grouping – cell and serum grouping.
- Rh typing.
- Anti body titers.
- Blood grouping techniques – Other methods.
- Donor selection & Registration – Demo.
- Blood Collection – Demo.
- Storage, Preservation & Processing of blood – Demo.
- Quality control Demo.
- Investigation of Transfusion, reactions.
- Cross matching.
- Direct and Indirect Coombs test.
- Mandatory Test – Screening Tests – Demo.
- Assessment.

Unit-5: Histopathology Lab Process

6

- Histopathology.
- Introduction.
- Materials, Equipment & Techniques.
- Biopsy, Autopsy.
- Collection, Preservation & Labeling of Slides.
- Blocks, Specimens Techniques.
- Grossing Methods.
- Fixatives.
- Processing of the tissues including Bone.
- Embedding.
- Section Cutting.
- Staining & Mounting.
- Special Stains.
- Preservation of reports & records.
- Assessment.

Unit-6: Cytology

6

- Cytology.
- Techniques Equipment & Procedures – FNAC.
- Imprintsmear, Vaginal & Buccalsmear, Swabs.
- Staining procedure and Mounting.
- Preparation of fluids for Cytological Examination.
- Immuno histo chemistry.
- Assessment.