**Syllabus for the post of**

**(1) Professor, Pathology, Class- I (Advt. No.: 36/2019-20)**

**(2) Associate Professor, Pathology, Class- I (Advt. No.: 58/2019-20)**

**Marks – 200 Questions – 200 Medium - English**

**1) GENERAL PATHOLOGY:**

Introduction to Pathology, Normal cell and tissue structure and function, the changes in cellular structure and function in disease, Causes of disease and its pathogenesis, Reaction of cells, tissues, organ systems and the body as a whole to various sub lethal and lethal injuries.

**2) SYSTEMIC PATHOLOGY**:

The study of normal structure and function of various organ systems and the aetiopathogenesis, gross and microscopic alterations of structure of these organ systems in disease and functional correlation with clinical features.

**3) HAEMATOLOGY**

Introduction to haematology, the study of Haematology includes all aspects of the diseases of the blood and bone marrow, hematopoiesis and extramedullary hematopoiesis, role of anticoagulants in hematology, definition and classification of anemia, investigation of anemia, the peripheral blood picture in anemia, Maintenance of records, Information retrieval, use of Computer and Internet in medicine, Quality control, waste disposal.

**Hematological manifestations of systemic diseases** like liver disorders, renal disorders, infections, cancers, parasitic diseases, AIDS, pregnancy and surgical patients.

**4) TRANSFUSION MEDICINE (BLOOD BANKING)**

Basic immunology, ABO and Rh groups, Clinical significance of other blood groups, Transfusion therapy including the use of whole blood and RBC concentrates, Blood component therapy, Rationale of pre-transfusion testing, Infections transmitted in blood, selection of donors and screening, Blood grouping and cross matching, Adverse reactions to transfusion of blood and components, Quality control in blood bank, Blood bank Audit.

**5) SURGICAL PATHOLOGY**

Histogenetic and patho-physiological processes.

**6) AUTOPSY PATHOLOGY**

Technique of autopsy, understanding of various disease processes.

**7) CYTOPATHOLOGY**

The evaluation and reporting of cytopathology specimens.

**8) LABORATORY MEDICINE**

The normal range of values of the chemical content of body fluids, significance of the altered values and its interpretation, Possess knowledge of the principles of specialized organ function tests and the relative utility and limitations of each and significance of the altered values: (i) Renal function tests, (ii) Liver function tests (iii) Pancreatic function tests (iv) Endocrine function tests (v) Tests for malabsorption. Principles, advantages and disadvantages, scope and limitation of automation in the laboratory, the principles and methodology of quality control in the laboratory.

**9) BASIC SCIENCES (IN RELATION TO PATHOLOGY)**

**(i) IMMUNOPATHOLOGY:** Principles and mechanism involved in immunity, ELISA techniques, Radioimmunoassay, HLA typing, Interpret simple immunological tests used in diagnosis of diseases and in research procedures, Immunoelectrophoresis, Immunofluorescence techniques especially on kidney and skin biopsies, Anti-nuclear antibody (ANA), Anti-neutrophil cytoplasmic antibody (ANCA).

**(ii) ELECTRON MICROSCOPY:** Principles and techniques of electron microscopy and the working of an electron microscope (including Transmission and Scanning Electron microscope: TEM and SEM), Recognise the appearance of the normal subcellular organelles and their common abnormalities.

**(iii) ENZYME HISTOCHEMISTRY:** Principles, use and interpretation of common enzyme histochemical procedures (Alkaline Phosphatase, Acid

Phosphatase, Glucose-6-Phosphate Dehydrogenase, Chloroacetate Esterase).

**(iv)** **IMMUNOHISTOCHEMISTRY:** Principles and exact procedures of various immunohistochemical stains using both PAP (Peroxidase-antiperoxidase) and AP-AAP (Alk. Phosphatase-anti-Alk. Phosphatase) ABC (Avidin-Biotin Conjugate) systems; employing monoclonal and polyclonal antibodies. Limitations of immuno-histochemistry.

**(v)** **MOLECULAR BIOLOGY:** Principles of molecular biology especially related to the understanding of disease processes and its use in various diagnostic tests. The principle and steps and interpretation of Polymerase Chain Reaction (PCR), Western Blot, Southern Blot, Northern Blot and Hybridisation) procedures.

**(vi)** **CYTOGENETICS:** Methods of Karyotyping and Fluorescent in-situ Hybridisation (FISH).

**(vii)** **RADIO ISOTOPE AND AUTORADIOGRAPHY:** Principles of the commonly used radioisotopes in medicine and autoradiography, and the instruments used to measure radioactivity.

**(viii)** **TISSUE CULTURE:** Methods of tissue culture.

**(ix)** **PRINCIPLES OF MEDICAL STATISTICS:** Importance of statistical methods in assessing data from patient material and experimental studies.

**10) RESEARCH METHODOLGY.**

**11) INDIAN MEDICAL COUNCIL (PROFESSIONAL CONDUCT, ETIQUETTE AND ETHICS) REGULATIONS, 2002.**

**18) CURRENT TRENDS AND RECENT ADVANCEMENTS IN PATHOLOGY.**