SYLLABUS FOR COMPUTER BASED RECRUITMENT TEST (CBRT) FOR THE POST OF JUNIOR PATHOLOGIST IN ESI SCHEME UNDER LABOUR DEPARTMENT (Advt No. 06 Year 2019)

I. General English including Grammar **- 10 marks**

II. General Knowledge, Current Affairs and Events of National and International Importance **- 10 marks**

III. Logical Reasoning and Analytical Ability **- 25 marks**

IV. Core: - 30 marks

General Pathology.

Cellular adaptation cell injury and cell death
Mechanism, morphology and examples of cell injury, necrosis and apoptosis.
Subcellular and cellular responses and adaptation to injury
Intracellular accumulations, pathological calcification and cell aging.

Acute and chronic inflammation
Vascular and cellular events in acute inflammation, chemical mediators, outcome and morphological patterns of acute inflammation.
Chronic inflammation with special reference to granulomatous inflammation.

Hemodynamic disorders, thrombo embolic disease and shock.
Edema, hyperemia, congestion and haemorrhage.
Normal Hemostasis, thrombosis, DIC, embolism, infarction and shock

Neoplasia
Definition, nomenclature and biology of tumor growth.
Molecular basis of cancer with special reference to carcinogenic agents and molecular basis of multistep carcinogenesis
Epidemiology and clinical features of tumors.

Infectious Diseases
General principles of microbial pathogenesis, bacterial, fungal, parasitic and viral infections.

Environmental and nutritional pathology
Common environmental and occupational exposures leading on to diseases.

Disease of Infancy and Childhood
Congenital anomalies, birth injuries, diseases of neonates, inborn errors of metabolism, tumor and tumor like lesions of infancy and childhood.

Systemic Pathology
Blood vessels, lymphatic and veins
Normal morphology, congenital anomalies, atherosclerosis, hypertensive vascular disease.
Inflammatory and neoplastic diseases of all the vessels.

Heart --Normal morphology, its blood supply and effect of aging on heart.
Ischemic, hypertensive, valvular, congenital heart diseases and Cardiomegaly

Lungs--Congenital anomalies
Obstructive and restrictive pulmonary diseases.
Diseases of vascular origin.
Infections and tumors of lung

Lung transplantation
Diseases of pleura.

Head and Neck Oral cavity: - inflammatory disease and tumors
Diseases of teeth and supporting structures.
Upper airways and ear – congenital anomalies, infections and tumors.

Gastro Intestinal Tract--Congenital anamalies, infections inflammatory and vascular disorders and tumors of esophagus, stomach, small and large intestines, appendix and anal canal.

Haematology
Clinical Correlation
Signs & Symptoms , General & Systemic examination) with various haematological disorders.

Biology of stem cell & disorder of Haematopoiesis.
Overview of stem cell biology and cellular biology of haematopoiesis.
Transcription factors and humoral regulation in normal and malignant haematopoiesis.
Interaction between haematopoietic stem cells, progenitor cell and stromal compartment of bone marrow.
Stem cell homing & mobilization.

Erythroid maturation, differentiation and abnormality.
Pathobiology of human erythrocyte & Haemoglobin.
Anaemias
Approach to anaemia in adults and children in: Clinical correlation & diagnostic modalities.
Disorder of iron metabolism including iron overload.
Anaemia of chronic disorders with special reference to infections, collagen vascular disorders, inflammation etc.
Definition, lab diagnosis of Haemoglobin disorders like Thalassemia, sickle cell anaemia, Haemoglobin associated with altered Oxygen affinity.
Red blood cell enzymopathy, membrane disorder, autoimmune hemolytic anaemia, non immune hemolytic anaemia, paroxysmal nocturnal haemoglobinuria.

WBC disorders, complement and immunoglobin biology
Normal granulopoiesis
Acquired and congenital disorders of phagocytosis (neutrophil, monocyte, eosinophil and macrophages)
Disorder of lymphocyte function
Storage disorder.
Lympocyte response to the various viral disorders like infectious

Haemotological malignancies:-
Conventional & molecular cytogenetic and immunohistochemical basis of haematological malignancies.
Classification (FAB, WHO). Their basis and diagnostic approach to various haematological malignancies.
Pathophysiology, prognostic factors, cytochemistry, cytogenetics of various acute myeloid and lymphoblastic leukaemias
Pathophysiology of Non-Hodgkin's lymphoma, Clinical staging of Hodgkin's lymphoma. Role of molecular cytogenetics and immunohistochemistry in Hodgkin's and Non-Hodgkin's lymphoma and lymphoproliferative disorders

Immunopathology
Innate immunity
Role of phagocytic cells, complement, mast cells & humoral mechanisms.

Specific Acquired Immunity-
Details about antibody production & action, Brief principles about memory, Ag specificity & vaccination
Cell involved in Immune response-
T- lymphocytes, B-lymphocytes, macrophages, dendritic cells and natural-killer
cells, dendritic cells, Natural killer Cells

- **Cytokines with details about their properties and functions**
- **Structure and function of histocompatibility molecules and disease Association**

Disorders of the immune system

- All hypersensitivity reactions
- Autoimmune disorders with special reference to SLE, Rheumatoid arthritis, Sjogren's syndrome, systemic sclerosis, polyarteritis nodosa and other vasculitides, Mixed connective tissue disorders and inflammatory disorders.
- Immunodeficiency syndrome – Acquired with emphasis on AIDS.