Syllabus for Scientific Assistant , Div. Of Thrombosis Research

1. Laboratory accreditation and management, implementation of quality system.
2. Maintenance of quality systems, writing SOPs, addressing non-conformities. Quality control in testing lab, preparation of controls for haematology and coagulation, proficiency testing, ILC, LJ chart.

3. **Instrumentation and Analytical Principles**
   a. Equipments: Biochemistry analyzer, Shaker incubator, water-bath, autoclave, hot air oven, light microscope, CO_2 incubator, LAF, radioisotopes used in blood material interaction studies, pH meter, electronic balances, Sonicator, Electrophoresis, PAGE.
   b. Coagulation: PT, aPTT, PTT, FVIII, FPA, TAT, coagulation pathway analysis based on caogulometer and ELISA.
   c. Platelet Aggregation: Aggregometry, Lumino-aggregometry, Platelet function analysis, agonists.
   d. Haematology: Haematology analyzer, Plasma haemoglobin, % haemolysis, UV-Vis spectrophotometry.
   e. Platelet activation: basics of flowcytometry, maintenance and application of flowcytometer, platelet activation analysis, cells characterization, cell surface marker analysis.
   f. Specimen handling, specimen collection, blood collection and safety precautions.
   g. Reagent handling and preparations. Bufferpreparation, agonist preparation, Biochemical analysis (Na, K, lactate glucose ATP, 2,3 DPG), protein estimation, analysis in blood/platelet storage system.

4. **Principles and Practice**
   h. Blood Material Interaction as per ISO 10993:4: Exposure of the materials with blood, device characterization based on the interaction with blood, blood storage systems, Anticoagulants, tests as per the end use of device.
   i. Phlebotomy, Complement activation, platelet factor 4 analysis by ELISA.
   j. Segregation and disposal of laboratory waste, types of disinfectant.
   k. Importance of plasma proteins and its commercial significance, understanding of Indian Pharmacopoeia and isolation and analysis of plasma products as per the pharmacopoeia.
   l. Cytocompatibility analysis for material with Endothelial cells, cell proliferation assay using ^3H thymidine, apoptosis assay.
   m. Plasma fractionations, cryoprecipitate, viral inactivation, maintenance of class 100 facility, continuous flow centrifuge, ion exchange chromatography and resins used for the isolation of different plasma fractions.