



GOVERNMENT OF JAMMU & KASHMIR  
SHER-I-KASHMIR INSTITUTE OF MEDICAL SCIENCES  
SOURA SRINAGAR

**Syllabus for Assistant Professor Posts of  
the Department of Clinical Haematology  
& Paediatric Haematology,  
SKIMS, SOURA.**

## I. Basic and Laboratory Hematology

1. Introduction to Clinical Hematology
2. Hematopoiesis and bone marrow microenvironment
3. Bone marrow examination and interpretation
4. Red blood cells: structure and function
5. White blood cells and immune system development
6. Overview of normal hemostatic mechanisms
7. Automated hematology analyzers and interpretation
8. Peripheral smear interpretation
9. Special stains and cytochemistry
10. Hemoglobin electrophoresis and HPLC
11. Flow cytometry and applications
12. Molecular diagnostics: PCR, RT-PCR, FISH, NGS
13. Cytogenetics and cytogenomics
14. Minimal/measurable residual disease (MRD) techniques
15. Circulating tumor DNA (ctDNA)
16. Principles of Nuclear Medicine in hematology and oncology
17. Biostatistics and research methodology
18. Evidence-based medicine and critical appraisal
19. Clinical trial design and Good Clinical Practice (GCP)
20. Quality assurance, NABH and NABL concepts

## II. Benign Hematology

21. Iron metabolism and iron deficiency anemia
22. Megaloblastic anemia
23. Anemia of chronic disease
24. Hemoglobinopathies
25. Thalassemia: clinical aspects, molecular genetics, and screening
26. Sickle cell disease
27. Red cell membrane disorders
28. Red cell enzymopathies
29. Autoimmune hemolytic anemia
30. Paroxysmal nocturnal hemoglobinuria
31. Bone marrow failure syndromes
32. Aplastic anemia
33. Pure red cell aplasia
34. Polycythemia and erythrocytosis
35. Red cell disorders in pregnancy and newborn
36. Hematological manifestations of systemic diseases

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37. Hematological manifestations of infections including HIV and tuberculosis

### III. Hemostasis and Thrombosis

38. Megakaryopoiesis and platelet physiology
39. Quantitative and qualitative platelet disorders
40. Immune thrombocytopenia (ITP)
41. Thrombotic thrombocytopenic purpura and hemolytic uremic syndrome
42. Hemophilia: genetics, diagnosis, and management
43. Novel therapies in hemophilia including emicizumab and gene therapy
44. Von Willebrand disease
45. Rare coagulation disorders
46. Dysfibrinogenemias
47. Disseminated intravascular coagulation
48. Fibrinolytic disorders
49. Lupus anticoagulant and antiphospholipid syndrome
50. Inherited thrombophilia
51. Cancer-associated thrombosis
52. Thrombosis in pregnancy
53. Pediatric thrombosis
54. Laboratory evaluation of prothrombotic states
55. Anticoagulants including DOACs and monitoring
56. Viscoelastic testing (TEG/ROTEM)
57. Massive transfusion protocols
58. Hemostasis in newborns

### IV. Malignant Hematology

59. WHO/ICC classification of hematolymphoid neoplasms
60. Cell cycle and carcinogenesis
61. Principles of chemotherapy and targeted therapy
62. Acute lymphoblastic leukemia in children and adults
63. Philadelphia chromosome positive ALL
64. Acute myeloid leukemia and ELN risk stratification
65. Acute promyelocytic leukemia
66. Measurable residual disease in leukemia
67. Molecular genetics of leukemia
68. Chronic myeloid leukemia
69. Chronic lymphocytic leukemia
70. Hairy cell leukemia
71. T-cell lymphoproliferative disorders
72. Myelodysplastic syndromes
73. Myeloproliferative neoplasms

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74. Polycythemia vera
75. Essential thrombocythemia
76. Primary myelofibrosis
77. JAK2, CALR, and MPL mutations
78. Lymphoma classification and staging
79. Hodgkin lymphoma
80. Non-Hodgkin lymphoma
81. PET-CT in lymphoma
82. Plasma cell disorders
83. Multiple myeloma
84. MGUS and smoldering myeloma
85. Amyloidosis
86. Waldenström macroglobulinemia
87. Histiocytic disorders
88. Clonal hematopoiesis (CHIP/CCUS)

## V. Hematopoietic Stem Cell Transplantation and Cellular Therapy

89. Principles of hematopoietic stem cell transplantation
90. Autologous and allogeneic transplantation
91. Conditioning regimens
92. Stem cell sources and collection
93. Graft versus host disease
94. Infection prophylaxis post-transplant
95. Supportive care in transplantation
96. Cellular therapies including CAR-T therapy

## VI. Transfusion Medicine and Immunohematology

97. Blood group systems and immunohematology
98. Component preparation and therapy
99. Apheresis procedures
100. Irradiated and leukoreduced blood products
101. Transfusion reactions and management
102. Massive transfusion
103. Blood safety and NAT testing
104. Hemovigilance
105. Stem cell collection and processing
106. Quality systems in transfusion medicine

## VII. Supportive Care and Consultative Hematology

107. Febrile neutropenia
108. Antimicrobial prophylaxis

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- 109. Tumor lysis syndrome
- 110. Hyperleukocytosis and leukostasis
- 111. Hematologic emergencies
- 112. Palliative care in hematologic malignancies
- 113. Consultative hematology in surgery
- 114. Consultative hematology in obstetrics and gynecology
- 115. Hematological issues in critical care

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