

**QUESTION BANK FOR M.D. PATHOLOGY.**  
*By Dr.Girish Kamat.*

**PAPER I**

**CELL INJURY**

1. Apoptosis in health and disease
2. Role of Free radicals in disease causation and Antioxidants in their prevention.
3. Discuss various cell responses to injury.
4. Chemical pathology of necrosis.
5. Mechanism of cell death in case of ionizing radiation.
6. Pathogenesis of ischemic cell injury
7. Mention causes of cellular injury. Describe in detail the sequence of events in ischemic and hypoxic injury to cells.
8. Describe events in a dying cell.
9. Discuss gangrene.

**CELLULAR ADOPTATION, INTRACELLULAR ACCUMULATION AND AGEING**

1. Pigments disorders
2. Discuss pigments in histopathology.
3. Ochronosis.
4. Telomere
5. Age related pathological changes in various organs and systems.
6. Cellular Ageing.
7. Endogenous pigmentation
8. Albinism

**INFLAMMATION**

1. Inflammatory pseudotumor.
2. Differential diagnosis of granulomatous diseases
3. Histopathological assessment of granulomas.
4. Defects in chemotaxis
5. Adhesion molecules in inflammation.
6. Platelet derived inflammatory mediators.
7. Tuberculoma
8. Endothelin
9. Functions of leucocytes in relation to inflammation and clinical conditions of leucocyte dysfunction
10. Describe chemokines and their role in inflammation
11. Acute phase reactants

12. Constituents of granules of leucocytes and their function
13. Role of arachadonic acid metabolites in inflammation
14. Discuss role of mast cells in health and disease
15. Discuss cytokines and their role in health and disease
16. Discuss complement aberrations

### **TISSUE REPAIR**

1. Pathologic calcification
2. Role of Myofibroblast in health and disease
3. Angiogenesis in health and disease
4. Note on fracture healing
5. Cyclins
6. Role of extra-cellular matrix in cell growth
7. Discuss current concepts of mechanisms of cutaneous wound healing
8. What are extra cellular matrix components? Discuss their role in healing
9. Types of collagen and their significance
10. Proliferative tumor like lesions
11. Growth factors
12. Discuss mechanisms involved in repair
13. Callus
14. Signal transduction mechanisms
15. Factors affecting wound healing

### **HEMODYNAMIC DISORDERS**

1. Pathophysiology of irreversible shock
2. Thrombogenesis
3. Cardiac edema
4. Amniotic fluid embolism
5. Discuss pathology of chronic passive congestion
6. Discuss in detail pathogenesis and pathology of shock
7. Septic shock
8. Recent advances of Multiple organ dysfunction syndrome
9. Endothelial cell in health and disease
10. Infarct
11. Fat embolism
12. Mechanisms of edema formation

### **GENETICS**

1. Inborn errors of metabolism
2. Molecular and biochemical basis of Mendelian disorders
3. Gene cloning—Merits and Demerits
4. Gene therapy
5. Disorders due to sex chromosomes

6. Sex-Linked inheritance
7. Phenylketonuria
8. Implications of Genomic imprinting in human disease
9. Molecular biology of Goucher disease
10. Discuss in detail about Ehler Danlos syndrome
11. Down syndrome
12. Autosomal recessive disorders
13. Discuss about cytogenetic disorders
14. Mucoviscidosis
15. Chromosomal quantitative abnormalities
16. Translocations
17. Fructosuria
18. Gene tracking

### **DISEASES OF IMMUNITY**

1. Discuss pathogenesis of AIDS with a note on various opportunistic infections
2. Type IV hypersensitivity reactions
3. Mast cell
4. Concept of hypersensitivity disorders
5. Significance of antineutrophil cytoplasmic antibodies
6. Amyloidogenesis
7. Graft Vs Host disease
8. Discuss classification, chemical nature pathogenesis and clinical syndrome of amyloidosis
9. Importance of Co-Stimulation in immune response
10. Minor histocompatibility antigens
11. Discuss various primary immunodeficiency disorders
12. Laboratory diagnosis of AIDS
13. Factors influencing transplant rejection
14. Antiphospholipid antibodies and their significance
15. Discuss basic principles of organ transplantation
16. HLA
17. Discuss in detail Immune complex Disease in Humans
18. HLA and disease
19. Diagnosis of HIV
20. Lymph node changes in HIV infection
21. Delayed hypersensitivity reactions
22. Lab diagnosis of SLE
23. Classify rejection reactions and describe pathology of acute rejection
24. Natural killer cells
25. Endocrine amyloid
26. Aetiopathogenesis and pathology of SLE

27. Aetiopathogenesis of auto-immune disorders
28. Role of MHC in disease
29. Discuss function of macrophages
30. Discuss logistics of establishing a modern organ transplantation lab.  
Discuss newer techniques in tissue typing
31. Discuss in detail the non neoplastic cutaneous and mucocutaneous manifestations of HIV infection
32. Superantigens in health and disease

### **NEOPLASIA**

1. Describe host defense against tumors
2. Discuss mechanism of metastasis and outline the role of stroma in tumor progression
3. Discuss genes in neoplasia
4. Role of tumour stroma in neoplastic growth and progression
5. Cytoplasmic filaments in tumours
6. Chromosomal aberrations in solid tumours
7. Describe viruses and human cancer
8. Mechanisms of spread of tumors
9. Paraneoplastic syndromes
10. Describe value of imaging and molecular techniques in diagnosis of neoplasia
11. Metastasis genes
12. Discuss recent concepts of carcinogenesis and role of oncogenes
13. Telomerase and neoplasia
14. Tumor suppressor genes
15. Prognostic markers
16. Biological carcinogens
17. AFP
18. Oncogenes- Classification, detection and analysis
19. Chemical carcinogenesis
20. Tumour markers
21. CEA
22. Lab diagnosis of cancer
23. Curable cancers
24. Natural anticarcinogens
25. Discuss role of customs and habits in neoplasia
26. Prognostic indices in epithelial neoplasms
27. Discuss role of diet in carcinogenesis
28. Role of angiogenesis in Neoplasia
29. Tumoral calcinosis
30. Mechanisms of induction of hypercalcemia in malignancy
31. Discuss role of EBV in malignancy

32. Oncogenes form the final common pathway in multistep carcinogenesis-  
Discuss
33. Describe methods for early diagnosis of neoplasia
34. HPV and genital cancer

### **INFECTIOUS DISEASES**

1. Syphilitic aneurysm
2. Prion diseases
3. Viral inclusions
4. Discuss problem of filariasis
5. Lab diagnosis of a case of food poisoning
6. Give an account of lab diagnosis of leishmaniasis
7. Aspergillosis
8. Pathology of cerebral malaria
9. Serodiagnosis of tuberculosis
10. Pathogenesis of S.typhi infection and lab diagnosis
11. Discuss neurosyphilis
12. Lymph node changes in leprosy
13. Lyme disease
14. Acanthoemeba
15. Fulminant mycotic lesions
16. Neuritic leprosy
17. B-19 parvovirus
18. Legionaire disease
19. Discuss lab diagnosis of typhoid fever
20. Yersinia pestis pneumonitis
21. Classify viral haemorrhagic fevers. Describe about dengue fever
22. Non dermatological leprosy
23. Cryptococcoma
24. Life cycle of wucheria bancrofti. Discuss about elephantiasis.
25. Visceral leprosy
26. Relapsing fever
27. Pathogenesis of falciparum malaria
28. Subcutaneous mycosis
29. Discuss immunology in leprosy
30. Lab diagnosis of brucellosis
31. Decontamination of HIV infected article
32. Discuss lab diagnosis of fungal infection
33. Bioterrorism
34. Approach to diagnosis of Sexually transmitted diseases
35. Atypical mycobacterial infections
36. Discuss tissue parasites—with lab diagnosis

## **ENVIRONMENT AND NUTRITION**

1. Occupational cancer
2. Discuss common diseases caused by environmental and occupational exposure
3. Vitamin A toxicity
4. Biological effects of radiation
5. Hepatic changes and PEM
6. Trace elements
7. Vitamin D
8. Discuss lipoprotein metabolism in health and disease
9. What are human health hazards of agricultural use and its relevance to Indian context
10. Xenobiotic metabolism
11. Hazards of smoking on health
12. Effects of Alcohol on human body
13. Obesity associated disease

## **DISEASES OF INFANCY AND CHILDHOOD**

1. Hydrops fetalis - Causes and lab diagnosis
2. Tumours of infancy and childhood
3. Embryonal tumours

## **MISCELLANEOUS**

1. Metallo-proteinases in health and disease
2. Role and limitations of molecular diagnostic techniques
3. Fixatives
4. Discuss clinical utility and methodology of telepathology
5. Silver impregnation technique in histopathology
6. Discuss role of immunohistochemistry in surgical pathology
7. Detection of mucin in tissue section
8. Describe in detail principle, technique and clinical application of flow cytometry
9. Pathology of prosthetic material and devices
10. Turn around time in surgical biopsy diagnosis
11. FISH
12. Role of PCR in diagnostic laboratory
13. Histopathologist and internet
14. Recent advances in molecular cytogenetic technologies
15. Autopsy in maternal death
16. Hematoxylin
17. Role of IHC in histological diagnosis
18. Flow cytometry
19. Prognostic utility of argyrophilic nucleolar organising regions

- 20 Immunoperoxidase staining
- 21 Hospital acquired infection and their prevention
- 22 Supravital stains
- 23 Principles of western blot technique
- 24 DNA finger printing
- 25 ELISA
- 26 Defibrination syndrome
- 27 DNA hybridization
- 28 Agar gel electrophoresis
- 29 Nucleolar organising regions
- 30 Microwave technology
- 31 Recombinant DNA techniques
- 32 Discuss utility of electron microscopy in diagnostic pathology
- 33 Discuss role of autopsy in pathology practice in current medical scenario
- 34 Signal transduction mechanisms
- 35 Umbilical cord stem cell transplantation
- 36 Discuss role of lectins in diagnostic pathology
- 37 Super antigens
- 38 Proliferation antigens
- 39 Discuss pathophysiology of disorders of respiratory burst pathway
- 40 DNA ploidy
- 41 Proteoglycans
- 42 Complement
- 43 Demonstration of fungus in tissues
- 44 TNF
- 45 Methods of assessment of cell proliferation
- 46 Leucocyte protein L1 (calprotectin)
- 47 Homeobox genes
- 48 IL-1 in disease
- 49 Discuss the role of image analysis in research and diagnostic pathology
- 50 Gold standard
- 51 Discuss frozen section
- 52 The concept of disease is no longer cellular but molecular- Discuss
- 53 Flame photometry
- 54 Isoenzymes
- 55 Discuss mesangial cells in health and disease
- 56 Describe various safety measures in medical lab
- 57 Staining procedures for identification of fungus
- 58 Serum electrophoresis
- 59 Glucose tolerance test
- 60 Discuss connective tissue in health and disease

## **PAPER II**

### **HEMATOLOGY RED BLOOD CELLS**

1. Pediatric anemias
2. Molecular genetics of thalassemias with reference to phenotypic and genotypic correlation
3. Schilling test
4. Congenital dyserythropoietic anemia
5. Polycythemia vera
6. Basic haematological features of haemolytic naemia
7. G6PD deficiency
8. Membrane defects in RBCs
9. Laboratory diagnostic tests for differential diagnosis of microcytic hypochromic anemia
10. Value of serum ferritin estimation in case of iron deficiency anemia
11. Fanconi anemia
12. Hemoglobinopathies with relevant lab investigations
13. Sideroblastic anemia
14. Hemolytic anemia of newborn
15. Discuss classification and lab diagnosis of haemolytic anemias
16. Anemia due to folate deficiency
17. Factors influencing severity of sickle cell anemia
18. Lab diagnosis of megaloblastic anemia
19. Lab diagnosis of cold agglutinin disease
20. B-12 binding proteins
21. Red cell survival studies
22. Discuss screening and selective tests for hereditary haemolytic disorders
23. Autohemolysins
24. Megaloblast
25. Discuss hemoglobinopathies
26. Discuss varieties, etiopathogenesis and lab diagnosis of polycythemia
27. Discuss the approach to anemia with elevated MCV and low reticulocytes

### **WBC DISORDERS**

1. CML
2. Classify leukemias and discuss childhood leukemias
3. Hairy cell leukemia
4. Mantle cell lymphoma
5. Classify and discuss diagnostic features of acute myeloid leukemia
6. Molecular cytogenetics of haematological malignancies
7. Richter syndrome
8. Immunotherapy in CLL

9. Detail pathogenesis of CML
10. Immunophenotyping and cytogenetics of acute leukemias
11. Ph chromosome
12. Prognostic markers in ALL
13. Describe briefly about eosinophils and their role in pathogenesis of disease
14. Staging of CLL
15. Agranulocytosis
16. discuss role of monocytes in pathology of inflammation
17. Neutrophil disorders
18. Chromosomal abnormalities in adult ALL

### **HEMATOLOGY- OTHERS**

1. Describe the etiology, pathogenesis, and laboratory diagnosis of bleeding disorder syndromes
2. Kell blood group antigen
3. Infectious mononucleosis
4. Discuss autologous blood transfusion and synthetic blood
5. Discuss viruses causing hemorrhagic fevers
6. Antiphospholipid antibody syndrome
7. Storage of blood
8. What are plasma cell dyscrasias. Discuss investigation for diagnosis of multiple myeloma
9. Automation in hematology laboratory
10. Fetal hemoglobin
11. Purpura
12. Concept of bone marrow transplantation
13. Give an account of laboratory diagnosis of malaria
14. Role of cytochemistry in hematology
15. Classify hemorrhagic disorders and discuss the laboratory diagnosis of any one
16. Peripheral stem cell transplantation
17. Describe in detail the standard protocol and requirement in establishing modern blood bank
18. Classification and different phases of myelofibrosis
19. Classify and discuss the pathogenesis and pathological findings in immune thrombocytopenia
20. Paroxysmal nocturnal hemoglobinuria
21. Plasma cell dyscrasias
22. DIC
23. Mononuclear cells
24. Discuss lab diagnosis of purpura
25. Safe blood transfusion
26. Bombay blood group

27. Current concepts of platelet concentrate preparation, modification and transfusion. Add a note on future prospects for platelet substitutes
28. Quantitative buffy coat
29. Bone marrow changes in AIDS
30. Activated partial thromboplastin time
31. Etiopathogenesis of ITP. How will you investigate these cases
32. Discuss myelodysplastic syndromes
33. Bone marrow aspiration and its role in diagnosis of various diseases
34. Leukemoid reactions
35. Fibrinolytic system
36. Lab investigations for functional platelet disorders
37. Protein C deficiency
38. Etiology and diagnostic evaluation of myeloproliferative disorders
39. Investigations in case of increased thrombotic risk
40. What is the method of preparation of blood components and discuss the importance in blood transfusion
41. Importance of growth factors in hematological diseases
42. Waldenstrom's macroglobulinemia
43. Transfusion transmitted diseases
44. Enumerate and classify causes of pancytopenia. Discuss pathogenesis and lab diagnosis
45. Von willebrand disease
46. Rh factor
47. Lymphocyte markers
48. Define quality control and quality assurance. Discuss internal and external quality control programmes with specific referances to hematology
49. What is the significance of blood indices in clinical hematology
50. Discuss in detail complications of blood transfusion and their preventive measures
51. Plasmacytoma
52. Describe function and structure of platelet in health and disease
53. Chromosomal abnormalities in hematological disorders
54. Hematological manifestations of HIV
55. Problems in pediatric blood transfusion
56. Lab investigations in case of bleeding gums
57. Hypercoagulability states- Lab diagnosis
58. Complications of bone marrow transplantation
59. Classifiacation of stem cell disorders
60. Prognostic significance of karyotyping in hematological malignancies
61. Importance of microenvironment in hematopoiesis
62. Molecular basis of functional disorders of platelets
63. Lupus anticoagulants

64. Platelet function tests
65. Discuss indications and procedures in interpretation of bone marrow biopsy
66. Paraproteins
67. Discuss investigations for mismatched blood transfusion
68. Autologous blood transfusion
69. Plasmapheresis
70. Fresh frozen plasma
71. What are leukoerythroblastic reactions? Discuss various causes producing it
72. Fibrin degradation products
73. Hemolytic uremic syndrome
74. Discuss new tools for evaluation of erythron function in man
75. Automated cell counters
76. Standards for hemoglobin estimation
77. Hemoglobin electrophoresis
78. Describe splenic lesions in hematological disorders
79. Antithrombin tests
80. Blood donors
81. Factors influencing ESR

### **CLINICAL PATHOLOGY URINE EXAMINATION**

1. Role of urine examination in case of jaundice
2. Urinary deposits
3. Hemoglobinuria
4. Ketonuria
5. Colour of urine
6. Laboratory diagnosis of a case suspected to be suffering from albuminuria
7. Diagnostic application of microscopic examination of urine

### **BODY FLUIDS**

1. Preservation of body fluids
2. Amniocentesis
3. Discuss value of examination of CSF in disease
4. CSF changes in various disorders of CNS
5. Cells in CSF

### **OTHER CLINICAL PATHOLOGY**

1. Importance of calibration, verification in a clinical laboratory
2. Glycosylated hemoglobins
3. Electrophoresis
4. Enzymes in health and disease

5. Discuss disposal of biomedical solid waste
6. Renal function tests
7. Investigations for male infertility
8. Malignant effusion
9. Discuss the role of serum enzymes as diagnostic tool in the diagnosis and prognosis of various diseases
10. Quality control in surgical pathological lab
11. Bronchoalveolar lavage
12. Automation in clinical pathology
13. Describe the role of bronchial brushings, bronchial washings, bronchial biopsy and BAL fluid examination in diagnosis of pulmonary diseases
14. Concentration techniques in stool examination
15. Tuberculin test
16. Coomb's test
17. Describe the serological tests available for the diagnosis of various malignancies
18. Semen analysis
19. Fibrin degradation products
20. Flow cytometry
21. Serological assays and urine assays for monoclonal gammopathies
22. Pregnancy tests
23. Enumerate in detail liver function tests and their value in diagnosis of liver diseases
24. Quality control in lab
25. Outline the plan of laboratory investigations in coma
26. Amniocentesis
27. Stool examination in patients with AIDS
28. Discuss ova and cysts in stools
29. Relevance of serum enzymes in MI
30. Microalbuminuria
31. Sputum examination
32. Diagnostic utility of fraction of serum lipids

### **CYTOLOGY**

1. The Bethesda system
2. Automation in cytology
3. Preparation and uses of cell block technique
4. Discuss the role of FNAC in breast diseases
5. Diagnostic procedures and accuracy of biliary tract cytology
6. Tumor diagnostic algorithm in metastatic cytologically unclassified tumors
7. Role of FNAC in thyroid tumors
8. Vaginal cytology
9. Processing of body fluids in cytological studies

10. Cytopathology of medullary carcinoma of thyroid
11. Describe the squash technique. Describe the squash cytology of CNS tumors
12. Recent concepts of automation of cervical cytology
13. Advantages and limitations of FNAC
14. Discuss the value of FNAC in lymph node enlargement
15. Discuss the value of cytology in lesions of cervix
16. Discuss value and limitations of FNAC
17. Exfoliative cytology
18. FNAC testis in male infertility
19. Limitations of FNAC in diagnosis of thyroid lesions
20. FNAC features of some important soft tissue tumors
21. Application of electron microscope in FNAC
22. Write an essay on “quality assurance in cervical/vaginal cytology reporting”
23. Brush cytology
24. Significance of squamous atypia in PAP smears
25. Pulmonary microvascular cytology
26. Cytological diagnosis of trachoma
27. Discuss utility of intra operative cytology in gynaecological diseases

**PAPER III**  
**CARDIOVASCULAR SYSTEM**

1. Discuss vasculitis syndromes
2. Pathological features of stenotic and purely regurgitant heart valves
3. Arteritides
4. Pathology of congenital heart diseases
5. Discuss pathology and recent advances in atherogenesis
6. Ischemic heart disease
7. Floppy valve syndrome
8. Billingham's grading system of acute rejection of cardiac transplantation
9. Rheumatic heart disease
10. Kaposi's sarcoma
11. Vegetations of heart
12. Wegener's granulomatosis
13. Discuss etiology, pathogenesis and pathology of cardiomyopathy
14. Polyarteritis nodosa
15. Thrombotic microangiopathies
16. Cardiac myxoma
17. Recent advances in investigation of cardiac death
18. Discuss lab investigations in case of MI
19. Pathology of rheumatic heart disease
20. Fallot's tetralogy
21. Transmural MI
22. Hemangioblastoma
23. Give critical account of nonrheumatic disorders of heart valve
24. Discuss pathogenesis and pathology of hypertension
25. Discuss changing concept of infective endocarditis
26. Noninfective endocarditis
27. Glomeruloid hemangioma
28. Discuss recent trends in pathogenesis of coronary heart disease
29. Discuss myocarditis
30. Biochemical indicators of atherosclerosis

**GASTRO INTESTINAL SYSTEM**

1. Carcinoid syndrome
2. Classify and discuss pathology of small intestinal tumors
3. Intestinal polyps
4. Gastrointestinal stromal tumors
5. Discuss role of endoscopic biopsy in diagnosis of gastrointestinal lesions
6. Ulcerative colitis
7. Describe acid peptic disease
8. Discuss the pathology of major malabsorption syndromes

9. Classify the tumors of salivary gland, Discuss in detail malignant epithelial tumors of salivary gland
10. Pathogenesis and pathology of type B chronic gastritis
11. Familial polyposis syndromes in GIT
12. Describe the utility of endoscopic biopsy diagnosis with special emphasis on interpretation of small intestinal tumors
13. Pathophysiology of hormones of stomach
14. Barrett's esophagus
15. Ulcerative lesions of GIT
16. Malignant lymphomas of GIT
17. Pathogenesis and pathology of Hirschprung's disease
18. Colonic polyps
19. Describe the problems of processing and interpreting GI biopsies
20. Intestinal lipodystrophy
21. Hirschprung's disease
22. Discuss pathological spectrum of chronic gastritis
23. Crohn's disease
24. Discuss histogenesis of salivary gland tumors and revised WHO classification
25. Eosinophilic enteritis
26. Reflux esophagitis
27. Whipple disease
28. Malabsorption syndrome
29. Discuss the pathology of campylobacter gastritis
30. Environmental gastritis
31. Premalignant lesions of oral cavity
32. Describe various types of classification of gastric carcinoma. Discuss their role in prognosis
33. MALT lymphoma
34. Give an updated account of tumors of stomach
35. Chronic diarrhoea
36. GI lesions in AIDS
37. Solitary rectal ulcer
38. Menetrier's disease
39. Steatorrhea

### **HEPATO BILIARY SYSTEM**

1. Hepatitis C
2. Role of histopathology in chronic hepatitis
3. Pathological changes in liver due to hepatitis C virus infection
4. Pathogenesis and pathology of gall stones
5. Jaundice in pediatric age group
6. Budd Chiari syndrome

7. Prognostic markers in liver cell carcinoma
8. Pathogenesis of acute pancreatitis
9. Discuss pathogenesis and pathology of alcoholic liver disease
10. Non cirrhotic portal hypertension
11. Histological spectrum of hepatocellular carcinoma
12. Chronic active hepatitis
13. Acute hemorrhagic pancreatitis
14. Fibrolamellar carcinoma
15. Alcoholic liver disease
16. Hepatoblastoma
17. Indian childhood cirrhosis
18. Lab diagnosis of pancreatic disorders
19. Acute pancreatitis
20. Hepatoportal cirrhosis
21. Classify hepatitis viruses and discuss their role in chronic liver disease
22. Discuss the role of liver biopsy in diagnosis of inherited metabolic disorder
23. Non epithelial tumors of liver
24. HCC
25. Reye's syndrome

### **RENAL SYSTEM**

1. Pediatric renal tumors
2. Renal lesions in SLE
3. Hereditary glomerular diseases
4. Wilm's tumor
5. Kidney in SLE
6. Xanthogranulomatous pyelonephritis
7. Bilateral hydronephrosis
8. Cyclosporin A nephrotoxicity
9. Congenital mesoblastic nephroma
10. Renal involvement in DM
11. Interstitial nephritis
12. Epithelial urinary bladder tumors
13. Discuss the role of electron microscopy and immunofluorescence in diagnosis of glomerular lesions
14. Etiopathogenesis and classification of glomerulonephritis
15. Effects of hypertension on kidney
16. Pathology and pathogenesis of basement membrane disease
17. Describe the range and significance of metaplastic changes in urinary bladder
18. Myeloma kidney
19. Glomerular changes in Henoch Schölein purpura
20. RPGN

21. Alport's syndrome
22. Extra renal rhabdoid tumor
23. Cystic diseases of kidney
24. Effects of chronic pyelonephritis
25. Role of renal biopsy in pediatric kidney tumors
26. Value of special stain in glomerular diseases
27. Discuss the pathology of mesenchymal tumors of kidney
28. Discuss differential diagnosis of nephrotic syndrome. Discuss the pathology of various glomerular diseases producing this syndrome
29. Nephrolithiasis
30. Desquamative interstitial nephritis
31. Autosomal dominant polycystic kidney disease
32. Discuss the role of circulating and locally formed immune complexes in renal disease
33. In situ transitional cell carcinoma of bladder
34. Diabetic nephropathy
35. Chromophobe adenoma
36. Malakoplakia
37. Clear cell sarcoma of kidney

### **FEMALE GENITAL SYSTEM**

1. Discuss classification and pathology of epithelial lesions of endocervix
2. Non villous trophoblast in endometrial curettage
3. Endometrial hyperplasia
4. Describe the recent aspects of pathology of ovarian tumors
5. In situ glandular neoplasia of cervix
6. Chorionic villi biopsy
7. Effects of tamoxifen on female genital tract
8. Microinvasive carcinoma of cervix
9. Recent advances in pathology of epithelial tumors of ovary
10. Current concepts of trophoblastic diseases
11. Gestational trophoblastic diseases
12. Classify ovarian tumors and describe the pathology and diagnosis of sex cord stromal tumors
13. Leydig cell tumors of ovary
14. Recent diagnostic and prognostic indices in endometrial carcinoma
15. Tumor markers in preoperative diagnosis of ovarian cysts
16. HCG
17. Thecoma
18. Gynandroblastoma
19. Endometriosis
20. Dating of endometrium
21. Discuss in detail pathology of female infertility

## **MALE GENITAL SYSTEM**

1. Discuss the role of testicular biopsy in infertility
2. Carcinoma of prostate
3. Prostatic intraepithelial neoplasia
4. Prognostic markers in prostatic carcinoma
5. In situ carcinoma testis
6. Premalignant lesions of penis
7. Describe the markers for metastatic prostate cancer. Add a note on methods to detect these markers
8. Germ cell tumors of testis
9. Non seminomatous germ cell tumors of testis
10. Testicular causes of male infertility
11. Leydig cell tumor of testis
12. Testicular lymphomas
13. Granulomatous prostatitis
14. Give an account of tumors of prostate

## **BREAST**

1. Medullary carcinoma of breast
2. Benign proliferative breast diseases
3. Prognostic markers in carcinoma of breast
4. Premalignant lesions of breast
5. Discuss classification of carcinoma of breast and discuss how prognosis is related to histological type
6. Phylloides tumor
7. Fibrocystic diseases of breast
8. Benign breast lesions prone to breast cancer
9. Epithelial hyperplasia of breast
10. Ductal ca in situ of breast
11. Risk factors in breast carcinoma
12. Staging of breast carcinoma
13. Secretory carcinoma of breast
14. Mammary dysplasia
15. Discuss tumor like lesions of breast
16. Cystic diseases of breast
17. Non neoplastic lesions of breast

## **LUNG**

1. Emphysema
2. Classify and describe the granulomatous lesions of lung
3. Discuss classification, pathology and lab diagnosis of tumors of lung
4. Malignant mesothelioma of lung

5. Small cell carcinoma of lung
6. Atelectasis
7. Asbestos related lung disorders
8. Lymphomatoid granulomatosis
9. Bronchogenic carcinoma
10. Recent advances in pulmonary lymphoproliferative diseases
11. Interstitial pneumonia
12. Pulmonary endocrine cells
13. Neoplastic and non neoplastic neuroendocrine proliferations of lung
14. Hyaline membrane disease
15. Pathology of pneumocystis carinii pneumonia
16. Shock lung
17. Pulmonary hemorrhage
18. ARDS
19. Special stain study in classification of lung cancer
20. Pulmonary lymphoma
21. Fungal infections of lung
22. Alfa 1 antitrypsin deficiency
23. Pulmonary hypertension
24. Discuss pneumoconiosis in detail
25. Discuss pathology of COPD
26. Discuss respiratory system pathology on prematurity
27. Discuss pathology of solitary pulmonary nodule
28. Pulmonary pseudolymphoma
29. Friedlander's pneumonia
30. Discuss pulmonary pathology in perinatal death
31. Inflammatory lesions of nasal cavity

**PAPER IV**  
**ENDOCRINE SYSTEM**

1. Functional manifestations of adrenal tumors
2. Chronic thyroiditis
3. Microscopic variants of papillary carcinoma of thyroid
4. Problems in diagnosis of papillary lesions of thyroid
5. Classify and discuss tumors of thyroid on detail
6. Hashimoto stroma lymphomatosa
7. Androgen insensitivity syndrome
8. Hormone secreting tumors of exocrine origin
9. Estrogen receptors
10. MEN syndromes
11. Medullary carcinoma of thyroid
12. Carcinoids
13. Hurthle cell
14. Solitary nodules in thyroid
15. Classify diabetes mellitus and describe pathology of pancreas in it
16. T3 and T4
17. Discuss tumors of thyroid
18. Discuss immunopathology of endocrine disorders

**SKIN**

1. Vesiculo bullous lesions of skin
2. Psoriasis
3. Discuss the neoplastic lesions of skin
4. Premalignant skin lesions
5. Discuss common skin adnexal tumors
6. Lymphoproliferative conditions of skin
7. Value of immunofluorescence techniques in diagnosis of skin disorders
8. Pigmented tumors of skin
9. Recent progress in diagnosis and prognosis of malignant melanoma
10. Nevus sebaceous
11. Staging of melanoma
12. Cutaneous lesions in AIDS
13. Nevus
14. Darrier's disease
15. Vascular tumors of skin

**BONES AND JOINTS**

1. Giant cell lesions of bone
2. Rheumatoid arthritis
3. Paget disease of bone
4. Interpretation of synovial biopsies

5. Discuss metabolic disorders of bone
6. Discuss classification and pathology of bone tumors
7. Microscopic variants of osteogenic sarcoma
8. Osteoarthritis
9. Adamentinoma of long bones
10. Non neoplastic giant cell lesions of bone
11. Discuss the bone diseases caused by osteoclast dysfunction and abnormal mineral homeostasis
12. Pathology of infectious arthritis
13. Classify cartilage forming tumors of bone and describe the morphological features of benign cartilaginous tumors
14. Radiological appearances indicating pathological changes in various bone tumors
15. Giant cell tumors of bone
16. Gouty arthritis
17. Gout
18. Discuss the primary malignant bone tumors
19. Osteomyelitis
20. Discuss the classification and pathology of tumors of odontogenic epithelium
21. Osteopetrosis
22. Clear cell sarcoma of tendons and aponeurosis
23. Cystic lesions of bone
24. Ewing sarcoma
25. Osteomalacia
26. Histogenesis of Ewing tumor
27. Aneurysmal bone cyst
28. Osteonecrosis
29. Give an account of non inflammatory, non neoplastic lesions of bone

### **SOFT TISSUE TUMORS**

1. Classify soft tissue tumors and describe about pathogenesis, grading, staging of sarcomas and their prognosis
2. Lesions associated with thymoma
3. Glassy cell carcinoma
4. Ossifying fibro myxoid tumors
5. malignant histiocytic disorders
6. Role of IHC in diagnosis of soft tissue sarcomas
7. Benign neoplasms of adipose tissue
8. Giant cell lesions of soft tissue
9. Small round cell tumors
10. Familial histiocytic proliferative disorders
11. Extra pulmonary small cell tumors

12. Small cell tumors of childhood
13. Discuss the role of special techniques in diagnosis of spindle cell tumors
14. Solitary fibrous tumor
15. Merkel cell tumor
16. Malignant rhabdoid tumor
17. Epithelioid leiomyosarcoma

### **PERIPHERAL NERVES AND MUSCLES**

1. Neurofibromatosis
2. Muscle biopsy
3. Classify and describe inherited neuropathies
4. Myesthesia gravis
5. Leprous neuritis
6. Spinomuscular atrophy
7. Neurogenic atrophy
8. Muscular dystrophy
9. Peripheral neuroectodermal tumors
10. Inflammatory neuropathies
11. Skeletal muscle tumors
12. Primitive neuroectodermal tumors
13. congenital myopathies
14. Duchenne's muscular dystrophy
15. Skeletal muscle biopsy
16. Inflammatory myopathies
17. Melanotic neuroectodermal tumors of infancy
18. Dystrophin
19. MPNST
20. Discuss pathology of neurogenic tumors nad related neoplasms of mediastinum
21. Parachordoma

### **CENTRAL NERVOUS SYSTEM**

1. Glioblastoma multiforme
2. CNS lesions in AIDS
3. Retinoblastoma
4. Discuss the pathology of neurodegenerative disorders
5. Discuss childhood CNS tumors
6. Alzheimer's disease
7. Discuss demyelinating diseases of CNS
8. Discuss the role of laboratory diagnosis in management of metabolic encephalopathy
9. Discuss non neoplastic lesions of CNS
10. Pseudotumor of orbit

11. HIV1 encephalomyelitis
12. Give an account of tumors of CNS
13. Medulloblastoma
14. Central neurocytoma
15. Creutzfeldt Jacob disease
16. Papillary meningioma
17. Leukoencephalitis
18. Cysticercosis
19. Wallerian degeneration
20. Tuberculoma of brain
21. Tuberos sclerosis
22. Discuss pathology of tumors of retina and neural ectoderm
23. Aneurysms in brain
24. Pleomorphic xanthogranulomatous astrocytoma
25. Subacute sclerosing panencephalitis
26. Pathogenesis and lab diagnosis of pyogenic meningitis

### **RETICULO ENDOTHELIAL SYSTEM**

1. NHL- WHO classification, molecular markers, and recent advances
2. Tumors of cells of accessory immune system
3. Malignant histiocytic disorders
4. Rosai Dorfman disease
5. Spleen in haematological diseases
6. Hodgkin's disease
7. Primary lymphoma of spleen
8. Reactive lymphadenopathy
9. Langerhan cell histiocytosis
10. Extra nodal lymphoma
11. Classify thymic epithelial tumors. Describe their pathology and recent advances in their diagnosis
12. Pseudolymphomas
13. Discuss histopathological variants of Hodgkin lymphoma
14. Lymphomas of unusual site and unusual type
15. Splenomegaly
16. Chromosomal abnormalities in Hodgkin's disease
17. Discuss non neoplastic lesions of lymph nodes
18. Classification of NHL
19. Discuss the pathogenesis and pathology of lymphoproliferative diseases associated with AIDS
20. Prognostic indicators of Hodgkin's disease
21. Role of frozen section in diagnosis of lymphoid malignancies
22. Angio immunoblastic lymphadenopathy
23. Discuss advances in diagnosis and classification of thymic epithelial tumors

24. Write in detail about malignant lymphoma of MALT
25. Cerebral lymphoma
26. Discuss about pathology of lymphoproliferative diseases
27. Extranodal lymphomas
28. Discuss lymphadenopathy
29. Ceroid histiocytosis
30. Langerhans cell histiocytosis
31. RS cell
32. Discuss pathology of lymph node in AIDS
33. Mycosis fungoides
34. Dendritic cell sarcoma
35. Discuss pathology of high grade NHL
36. Discuss laboratory approach in case of splenomegaly
37. Signet ring cell lymphoma
38. Kikuchi's disease
39. Describe classification, etiology, pathology and diagnosis of T cell malignant lymphomas
40. Histiocytosis X
41. Lymphoproliferative disorders of large granular lymphocytes.