

**MUHS QUESTION BANK
(TOPICWISE)
MD PATHOLOGY
(2012-2022)**

BY-

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PAPER 1-GENERAL PATHOLOGY, GENERAL NEOPLASIA, IMMUNOPATHOLOGY AND CYTOPATHOLOGY.

LAQ

Chapter 1- cell

1.Mechanism of cell cycle. Cell proliferation in health and diseases.(W-15)

Chapter 2- Cell injury, cell death and adaptation

- 1.Describe antioxidant defence mechanism and free radical impact on body.(W-20)
- 2.Causes of cell injury, sequence of events in ischemic and hypoxic injury to cell.(W-18)
- 3.Define apoptosis, pathophysiology and its role in pathological conditions.(S-18)
- 4.Give a brief account of cell injury and cell death in health and diseases.(S-17)
- 5.What is apoptosis.Discuss its etiopathogenesis and clinicopathologic correlations.(S-13)

Chapter 3- Inflammation and repair.

1.Write in detail about the role of chemical mediators in acute inflammation.(S-21)

Chapter 4-Hemodynamic disorder, thromboembolic diseases and shock

1.Discuss shock with special reference to its types, etiology and morphological appearance in various organs. Add a note on pathogenesis of septic shock.(W-21)

2. Discuss pathophysiology of septic shock with MODS. (W-20)
3. Discuss pathology of shock. (S-16)
4. Etiopathogenesis, complications and fate of thrombosis. (W-15).
5. Discuss pathology of oedema (W-14)

Chapter 5-Genetic disorders

1. Describe normal karyotype. Write in brief about autosomal disorders and disorders of sex chromosomes. Write a note on role of karyotyping in diagnosis of such disorders. (S-17)

Chapter 6- Diseases of immune system-

1. Define AIDS. Give properties, structure of etiological agent and pathogenesis, clinical features. Give AIDS defining opportunistic infections and neoplasms found in patients of AIDS. (S-22)
2. Classify autoimmune disease. Discuss etiopathogenesis and pathology of SLE. (W-19)
3. Define hypersensitivity. Discuss various hypersensitivity reactions with suitable examples. (S-19)
4. Classification, physico-chemical nature, pathogenesis and clinical syndrome of amyloidosis. (W-18)
5. Immune complex mediated diseases. (W-17).
6. Describe mechanism of autoimmunity. (W-16)
7. Describe pathogenesis of Systemic Lupus Erythematosus. Describe morphological changes in lupus nephritis. (S-15)
8. Describe pathogenesis and pathology of Graft vs Host disease. (S-15)
9. Define mendelian disorders. Classify and discuss disorders associated with defect in enzymes. (S-13)
10. Classify immunodeficiency diseases. Enumerate lab investigations for diagnostic workup and give interpretation. (W-13).
11. Give account of ANA and their role in various disease states. (S-12)

Chapter 7- Neoplasia-

1. Discuss in details chromosomal Abberations in solid tumours.(W-22)
2. Define neoplasia. What are carcinogens? Give steps involved in chemical carcinogenesis,clinical aspects of neoplasia, paraneoplastic syndrome and laboratory diagnosis of cancer.(S-22)
3. Discuss various methods and recent advances in in laboratory diagnosis of tumor.(W-21)
4. Describe mechanism of invasion and metastasis and role of stromal matrix in tumor progression.(S-20)
5. Discuss the molecular biology of biological carcinogenesis.(W-19)
6. Enumerate oncogenic DNA viruses. Discuss the role of Epstein barr virus in human neoplasms.(S-19).
7. Current concepts of cancer progression and metastasis.(W-17)
8. Describe molecular and cellular basis of invasion and metastasis of neoplasm.(W-16)
9. Enumerate malignancies associated with infectious agents . Write about pathogenesis of malignancies asspciated with Epstein-barr virus and helicobacter pylori. (S15)
- 10.Describe role of genes in carcinogenesis. Enumerate genomic tools in cancer diagnosis with specific examples.(W-13)

Chapter 8-Infectious diseases

Chapter 9- Environmental and nutritional diseases

1. Define obesity and discuss its etiopathogenesis and consequences.(S-21)
- 2.Describe in detail effect of radiation injury on human body.(S-20)
- 3.Role of vit D in health and diseases.(S-18)

Chapter 10- Diseases of infancy and childhood

Miscellaneous-

1. Discuss in detail endothelial cell in health and disease.(W-22)
2. Discuss non-alcoholic fatty liver disease. (W-12)
3. Discuss role immunohistochemistry in metastasis of unknown primary. (W-12)

SAQ

Chapter 1- cell

1. Role of Cyclins in cell cycle.(W-22)
2. Discuss cyclin dependent kinases and CDK inhibitors.(S-21)
3. Write in brief about stem cells and their implications.(S-16)
- 4.Growth factors(S-13)
- 5.Stem cells(W-12)

Chapter 2- Cell injury, cell death and adaptation

- 1.Discuss necrosis with special reference to its types and etiopathogenesis.(S-21)
2. Discuss biochemical features of apoptosis.(S-21)
3. Free radicals and role of anti-oxidants in the prevention of disease. (S-20)
4. Various body pigments and their special stains. (W-19)
- 5.Discuss molecular basis of apoptosis and its morphology(S-19)
- 6.Ochronosis.(W-18)
- 7.Pathological calcification.(W-18)
- 8.Molecular mechanism of apoptosis.(W-17)
- 9.Discuss disregulated apoptosis(S-15)
- 10.Give an account of telomeres.(S-15)
- 11.Write in brief about Oxidative stress(W-14)
- 12.Telomerase(W-13)
- 13.Reperfusion injury(W-13)

Chapter 3- Inflammation and repair

- 1.Defects in chemotaxis.(W-22)
- 2.Defects in chemotaxis.(W-20)
- 3.Write a short note on Angiogenesis in health and disease.(S-19)

4. Adhesion molecules.(S-18)
5. Write about mediators of wound healing.(S-17)
6. Mechanism of angiogenesis.(W-16)
7. Give an account of prostaglandins.(W-16)
8. Give brief account of chemical mediators of inflammation.(S-16)
9. Discuss chemokines(S-15)
10. Leucocyte function defects(S-15)
11. Leucocyte adhesion molecules.(S-12)

Chapter 4-Hemodynamic disorder, thromboembolic diseases and shock

1. Define shock. Give in details types and stages. Give pathogenesis and morphology of septic shock.(S-22)
2. Define embolism. Give in details of pulmonary embolism.(S-22)
3. What is infarction? Give types of infarct and details of pathology and pathogenesis of myocardial infarction.(S-22)
4. Discuss pathogenesis of septic shock.(S-19)
5. Amniotic fluid embolism.(W-18)
6. Pathogenic pathways in septic shock.(W-16)
7. Pulmonary embolism.(S-14)
8. Amniotic fluid embolism(W-13)

Chapter 5-Genetic disorders

1. Write in details about lysosomal storage diseases.(S-22)
2. Give an account of Down syndrome.(W-21)
3. Gene cloning-merits and demerits.(W-20)
4. Classify and discuss Lysosomal storage diseases in brief.(S-19)
5. Down's syndrome(W-18)
6. Fragile X syndrome.(W-16)
7. Give an account of Niemann-pick disease type A,B,C.(W-16)
8. Brief account of lysosomal storage disorders(W-15)
9. Familial hypercholesterolemia.(S-15)
10. Gene silencing(S-13)
11. Human karyotype in health and disease(S-12)

Chapter 6- Diseases of immune system

- 1.What are autoimmune diseases? Enumerate and describe general features and mechanism of autoimmunity.(S-22)
- 2.Define amyloidosis.Write pathogenesis and classification of amyloidosis.(S-22)
- 3.Give an account of antinuclear antibodies.(W-21)
- 4.Discuss severe combined immunodeficiency.(W-21)
- 5.Pathogenesis of SLE.(W-20)
- 6.Hypersensitivity reactions.(S-18)
- 7.Graft vs host disease.(W-17)
- 8.Primary systemic amyloidosis.(W-17)
- 9.Mechanism of rejection in kidney graft.(S-16)
- 10.MHC Complex(W-15)
- 11.Give an account of hyper IgM syndrome.(S-15)
- 12.Write in brief about mechanisms of hypersensitivity reactions(W-14)
- 13.NK Cells(S-14)
- 14.Amyloidosis spleen(S-13)
- 15.Complement system(W-12)
- 16.MHC molecules(S-12)

Chapter 7- Neoplasia

1. Prognostic markers in neoplasia.(W-22)
2. Discuss role of apoptosis in tumour development.(W-21)
3. Write in brief about Tumor suppressor genes. .(S-21)
4. Prognostic markers in neoplasia.(W-20)
5. Carcinogenesis in immunodeficiency syndromes.(S-18)
6. Paraneoplastic syndrome.(W-18)

7. Mention tumor markers and their association with cancer.(S-17)
- 8.Tumor suppressor genes and their mechanism of action.(S-14)
- 9.Metastatic cascade.(S-13)

Chapter 8-Infectious diseases

1. Viral inclusions.(W-20)
2. Extra-pulmonary tuberculosis.(S-20)
3. Give a brief account of sexually transmitted infectious diseases.(S-17)
4. Pathogenesis of HIV infection.(S-16)
5. Life cycle and pathogenesis of malaria.(S-13)
6. MDR in TB.(W-12)

Chapter 9- Environmental and nutritional diseases

1. Health effects of climate change.(S-20)
2. Diet and cancer(W-19)
3. Pathology of obesity. (S-18)
4. Pathology of alcohol abuse. (S-18)
5. Mention normal functions and deficiency syndromes of fat soluble vitamins. (S-17)
6. Write in brief about pathology of common occupational hazards. (S-17)
7. Role of habits and customs in predisposition to cancer.(S-16)
8. Hazards of radiation(W-15)
9. Fat soluble vitamins(W-15)
- 10.Occupational lung disorders(W-15)
11. Write in brief about pathology of alcohol abuse.(W-14)
12. Discuss geographic and environmental factors in etiology of cancer(W-14)
13. Lead poisoning(W-13)
- 14.Role of leptins in obesity(W-15)
- 15.Obesity(W-12)
- 16.Obesity and cancers(S-12)

Chapter 10- Diseases of infancy and childhood

1. Potter's syndrome. (W-19)
2. Write in short about neonatal respiratory distress syndrome(S-19)
3. Inborn errors of metabolism.(W-17)
4. Write in brief about malignant neoplasm of infancy and childhood.(S-17)

Miscellaneous-

1. Gene therapy.(W-22)
2. Give an account of FISH.(S-21)
3. Write about Frozen section and cryostat.(S-20)
4. Cytotoxicity assay.(W-19)
5. Biobanking(W-19)

6. Role of core needle biopsy in breast pathology.(W-17)
7. Ancillary methods of diagnosis.(S-16)
8. Discuss diagnosis of disease.(W-14)
9. Write in brief about application of molecular diagnostic.(W-14)
- 10.Minimal invasive autopsy in adult(S-14)
- 11.Proteomics(W-12)
- 12.Tissue preparation for immunohistochemistry(S-12)

CYTOLOGY

LAQ

1. Discuss various cytological methods with their advantages and limitations. Add a note on recent advances in cytology. (S-16)
2. Bethesda system of reporting cervical cytology. (W-14)
3. Discuss cytological findings in case of reactive lymphadenitis. How will you differentiate it from lymphoma on cytological examination. (S-12)

SAQ

1. Automation in cytology. (W-22)
2. Discuss intraoperative cytology. (W-21)
3. Give an account of endoscopic ultrasound guided FNAC. (W-21)
4. Give an account of ascitic fluid cytology. (S-21)
5. Bethesda system of cervical smear reporting. (W-20)
6. Diagnostic approach in FNAC of mediastinal tumors. (S-20)
7. Cervical intraepithelial neoplasia (CIN). (S-20)
8. Cytospin (W-19)
9. Discuss differential diagnosis of solitary thyroid nodule on cytology. (S-19)
10. Preparation and uses of cell block technique. (W-18)
11. Bronchioalveolar lavage. (S-18)
12. FNAC findings in solitary thyroid nodule. (W-16)
13. Sputum cytology and discuss utility in diagnosis (W-15)
14. Intraoperative cytology (S-15)
15. Utility of squash cytology in CNS lesion. (S-14)
16. FNAC of cystic lesions of salivary gland. (S-13)
17. LBC in diagnosis of cervical cytology. (W-12)
18. CSF cytology. (S-12)

PAPER 2-SYSTEMIC PATHOLOGY INCLUDING SYSTEMIC NEOPLASIA

LAQ-

Chapter 11-Blood vessels

1.Classify non-infectious vasculitis.Discuss pathogenesis and describe in detail morphological and clinical course of Polyarteritis nodosa.(W-13)

Chapter 12-The heart

1.Describe etiology of acquired valvular lesions of heart. Describe etiopathogenesis, risk factors,pathology and diagnostic investigations of infective endocarditis.(W-12)

Chapter 13-Diseases of white blood cells,lymph nodes,spleen and thymus

1.Discuss NHL-WHO classification,molecular markers and recent advances.(W-22)

Chapter 14-Red blood cells and bleeding disorders

Chapter 15-The Lung

1.Discuss recent advances in pulmonary Lymphoproliferative disorders.(W-22)

2.Give recent classification of lung tumours.Discuss the neoplastic and nonneoplastic neuroendocrine proliferation of lung.(S-22)

3.Classify lung tumours and discuss.(S-19)

4.Discuss etiopathogenesis of interstitial diseases of lung.(W-15)

5.Discuss pulmonary pathology in immunocompromised host.(S-14)

Chapter 16-Head and Neck

Chapter 17-The Gastrointestinal Tract

1. Classify adenomas of intestines. Discuss in detail etiopathogenesis of colon carcinoma. (S-21)
2. Discuss in detail about Interpretation of ileal biopsies. (W-20)
3. Discuss pathogenesis, morphology and complications of Inflammatory Bowel Disease. (W-19)
4. Discuss colorectal tumours. (S-19)
5. Give an account of gastric endoscopic biopsies. (W-14)

Chapter 18-Liver and Gallbladder

1. Describe interpretation of liver biopsy with reference to infective lesions. (W-21)
2. Discuss the pathology of regenerative and neoplastic hepatocellular nodules. (W-18)
3. Write etiopathogenesis, morphology and clinical course of chronic viral hepatitis. (S-13)

Chapter 19-The Pancreas

1. Discuss pancreatic tumours with special reference to their classification and general features. (S-15)
2. Write etiopathogenesis and morphology of pancreatic carcinoma. (S-13)

Chapter 20-The Kidney

1. Discuss classification, pathogenesis and pathology of acute Glomerulonephritis (S-20)

2. Describe the role of electron microscopy and immunofluorescence in diagnosis of glomerular lesions.(W-17)

3. Describe the role of electron microscopy and immunofluorescence in diagnosis of glomerular lesions.(S-16)

4. Enumerate indications, describe processing and interpretation of renal biopsy in a young patient with renal disease.(W-15).

5. Classify cystic diseases of kidney. Discuss pathogenesis and pathology of polycystic kidney.(S-12)

Chapter 21-The Lower Urinary Tract and Male Genital System

Chapter 22-The Female Genital Tract

1. Gestational trophoblastic diseases.(S-18)

2. Discuss classification, etiopathogenesis and diagnosis of Thyroid tumours.(W-16)

3. Discuss etiopathogenesis and complications of Diabetes mellitus. Add a note on morphological changes seen in various organs involved in this disease process.(W-16)

4. Discuss gestational trophoblastic diseases.(W-14)

5. Discuss pathology of gestational trophoblastic disease.(S-14)

6. Write about risk factors and molecular pathogenesis of endometrial carcinoma of uterus. Describe morphological variants, spread and metastasis(endometrial carcinoma).(W-13)

Chapter 23-The Breast

1. Molecular profiling of breast cancers and prognosis.(W-18)

2. Discuss role of Immunohistochemistry as surrogate marker of molecular subtypes of breast cancer. Discuss triple negative breast cancer.(W-15)

Chapter 24-The Endocrine System

Chapter 25-The Skin

1.Classify melanocytic nevi. Discuss in detail about general features, clinicopathological types,microscopy and prognostic indicators in malignant melanoma.(W-19)

2.Describe in details cutaneous lymphoproliferative disorders.(S-16)

Chapter 26-Bones,Joints and Soft Tissue Tumors

1.Discuss metabolic bone diseases and abnormal mineral homeostasis.(S-21)

2.Giant cell lesions of bone.(S-18)

Chapter 27-Peripheral Nerves and Skeletal Muscles

Chapter 28-The Central Nervous System

1.Classify Central nervous system tumours. Discuss pathogenesis and pathology of Gliomas and Neuronal tumors.(S-20)

Chapter 29-The Eye

Miscellaneous

1.Discuss pathogenesis and pathology of lymphoproliferative diseases associated with AIDS.(S-22)

2.Discuss Neuroendocrine tumors.(W-21)

3.Discuss in detail about recent advances in organ transplantation protocol and role of pathologist in transplant team.(W-20)

4. Describe various methods for early diagnosis of Neoplasia. (W-17)

5.Discuss autopsy findings in maternal death.(S-15)

SAQ-

Chapter 11-Blood vessels

1. Polyarteritis nodosa.(S-17)

Chapter 12-The heart

1. Write short note on Myocarditis(S-20)
2. Give an account of myocarditis.(S-15)
3. Give an account of cardiomyopathy.(W-14)
4. Libman-Sacks endocarditis.(S-14)

Chapter 13-Diseases of white blood cells,lymph nodes,spleen and thymus

1. Discuss Kikuchi disease in brief.How will you differentiate it from tubercular lymphadenitis?(W-19)
2. Lymphoproliferative diseases in immunocompromised states.
3. Splenic cysts.(S-18)
4. MALT Lymphoma.(W-17)
5. Rosai Dorfman disease.(S-16)
6. Non-neoplastic lesion of lymph nodes.(S-14)
7. Angioimmunoblastic lymphadenopathy.(W-13)
8. Lymphoma in immunodeficiency states.(W-13)

Chapter 14-Red blood cells and bleeding disorders

Chapter 15-The Lung

1. A cute respiratory distress syndrome.(W-21)
2. Write short note on primary atypical pneumonia.(S-20)
3. Describe and differentiate common granulomatous lesions of lung.(W-19)

4. Alfa 1 antitrypsin deficiency(S-17)
5. Interstitial pneumonia.(S-16)
6. Discuss in brief emphysema(S-15)
7. Discuss in brief pneumoconiosis.(W-14)
8. Granulomatous lesions in lungs.(W-13)
9. Pulmonary alveolar proteinosis.(W-12)
10. Thoracoscopic biopsies.(W-12)

Chapter 16-Head and Neck

Chapter 17-The Gastrointestinal Tract

1. Familial polyposis syndromes.(S-22)
2. Give a brief account of carcinoid tumours.(S-21)
3. Write short note on Crohn disease.(S-20)
4. Ulcerative lesions of intestine.(W-18)
5. Give a brief account of ulcerative lesions in intestine.(W-16)
6. Discuss premalignant lesions of gastrointestinal tract.(W-15)
7. Hirschsprung disease.(S-12)
8. Pathologic lesions involving peritoneal cavity(S-12)

Chapter 18-Liver and Gallbladder

1. Fibrolamellar Carcinoma Liver.(W-22)
2. Role of liver biopsy in jaundice.(S-22)
3. Write short note on Hemochromatosis.(S-20)
4. Discuss etiology and morphological patterns of Non alcoholic fatty liver disease.(W-19)

- 5.Enumerate etiological agents of viral hepatitis.Write in brief about clinicopathological syndromes of hepatitis.(S-19)
6. Non alcoholic fatty liver disease.(S-18)
- 7.Discuss chronic hepatitis.(W-16)
- 8.Discuss evaluation of liver biopsy in chronic hepatitis. (W-15)
- 9.Hepatorenal syndrome.(S-13)
- 10.Autoimmune hepatitis.(S-12)

Chapter 19-The Pancreas

- 1.Pancreatic tumors and tumor like conditions.(W-18)

Chapter 20-The Kidney

- 1.Kidney in SLE.(W-22)
- 2.Renal cystic disease.(S-22)
- 3.Discuss diabetic nephropathy.(W-21)
- 4.Discuss Focal Segmental glomerulosclerosis.(S-21)
- 5.Diabetic nephropathy(W-20)
- 6.Write in brief about histological alterations and clinical manifestations of glomerulonephritis.(S-19)
- 7.Describe morphology of Lupus nephritis.(W-15)
- 8.Give an account of crescentic glomerulonephritis.(W-14)
- 9.Paediatric renal tumours.(S-14)
- 10.Diabetic nephropathy(S-13)

Chapter 21-The Lower Urinary Tract and Male Genital System

- 1.Germ cell tumors.(S-22)
- 2.Special forms of cystitis(W-20)

3. Discuss clinic-pathological characteristics of Adenomatoid tumor.(W-19)
- 4.Germ cell neoplasms.(W-18)
- 5.Prognostic markers in carcinoma prostate.(W-17)
- 6.Prostatic intraepithelial neoplasia.(S-16)
- 7.Discuss role of testicular biopsy in male infertility.(W-15)
- 8.Discuss in brief testicular biopsy.(S-15)
- 9.Lab investigations for diagnosis of bladder cancer.(W-12)

Chapter 22-The Female Genital Tract

- 1.Give an account of endometrial hyperplasia.(W-21)
2. Discuss in brief Sex cord-stromal tumours of Ovary.(S-20)
- 3.Write in short about non neoplastic and cystic lesions of ovary.(S-19)
- 4.Endometrial hyperplasia.(W-17)
- 5.Role of E6 and E7 in cervical cancer.(W-15)
- 6.HPV and lower female genital tract.(W-13)
- 7.Endometrial hyperplasia.(S-13)
- 8.Genetic basis and differential diagnosis of complete and partial hydatidiform mole.(W-12)
- 9.Infertility due to Ovarian pathology.(S-12)

Chapter 23-The Breast

- 1.Prognostic markers in breast cancer.(S-22)
- 2.Give an account of papillary lesions in breast.(W-21)
- 3.Give an account of DCIS breast(S-21)
- 4.Male breast cancer.(W-20)

5. Discuss lesions of breast in children and adolescents.(W-19)
6. Phylloides tumor.(S-18)
7. Hereditary breast cancers.(W-13)
8. Gene expression profile in breast carcinoma.(S-13)

Chapter 24-The Endocrine System

1. Discuss thyroiditis in brief.(S-19)
2. Write in brief about complications of Diabetes mellitus.(S-19)
3. Describe histomorphology of Thyroiditis.(S-20)
4. MEN syndromes(W-17)
5. Autoimmune thyroiditis.(S-16)
6. MEN syndromes.(S-16)
7. Multiple endocrine neoplasia.(S-12)

Chapter 25-The Skin

1. Premalignant Skin Lesions.(W-22)
2. Discuss morphology and pathogenesis of Dermatitis herpetiformis.(S-21)
3. Give an account of Alzheimer disease.(S-21)
4. Give an account of vesiculo-bullous lesions of skin in brief.(S-19)
5. Lupus vulgaris.(S-18)
6. Mycosis Fungoides.(W-17)
7. Discuss general aspects of skin biopsy.(W-16)
8. Discuss in brief granulomatous lesions of skin.(S-15)
9. Sezary syndrome.(W-12)

Chapter 26-Bones, Joints and Soft Tissue Tumors

1. Giant cell lesions of bone.(W-22)
2. Giant cell rich bone lesions.(S-22)
3. Role of immunohistochemistry in soft tissue sarcomas.(W-18)
4. Enumerate types of arthritis .Give account of rheumatoid arthritis.(W-18)
5. Solitary fibrous tumor.(S-18)
6. Gouty arthritis.(S-17)
7. Give an account of Tumor like lesions of bone.(W-16)
8. Give an account of Tumor-like lesions of bone.(W-15)
9. Give a brief account of metabolic bone diseases.(S-15)
10. Morphological variants of Osteogenic sarcoma.(S-12)

Chapter 27-Peripheral Nerves and Skeletal Muscles

1. Muscle biopsy(W-20)
2. Myasthenia gravis.(S-17)
3. Role of muscle biopsy in diagnosis of muscular dystrophy.(S-14)
4. Muscle biopsy in skeletal muscle diseases.(S-13)

Chapter 28-The Central Nervous System

1. Papillary meningioma.(W-22)
2. Write in brief about Alzheimer disease.(W-21)
3. Pituicytoma. (W-20)
4. Discuss morphological spectrum of Multiple sclerosis.(W-19)
5. Discuss in brief Astrocytic tumours.(W-16)
6. Discuss pathology and pathogenesis of Alzheimer's dementia.(W-15)
7. Give a brief account of paediatric CNS tumours.(S-15)
8. Give an account of neurodegenerative diseases.(W-14)
9. Glioblastoma multiforme.(S-14)

Chapter 29-The Eye

1. Pseudotumor of orbit.(S-14)

Miscellaneous

- 1.Paraneoplastic syndromes.(W-22)
- 2.Discuss immunohistochemistry in round cell tumours. .(W-21)
- 3.Give an account of Frozen section and its utility(S-21)
- 4.Virtual digital pathology.(W-20)
- 5.Role of immunohistochemistry in malignant small round cell tumors.(S-18)
- 6.FISH(W-17)
- 7.Carcinoid syndrome.(S-17)
- 8.Cysticercosis(S-17)
- 9.Discuss frozen section and its utility in diagnosis.(W-16).
- 10.Lineage immunohistochemical markers.(S-16).
- 11.Discuss in brief approach to perinatal autopsy.(W-14)
- 12.Discuss in brief quality assurance in immunohistochemistry.(W-14)
- 13.Notochordal lesions(W-13)
14. Tumor markers(S-13)

**PAPER 3-HAEMATOLOGY,TRANSFUSION
MEDICINE, IMMUNOHAEMATOLOGY
INCLUDING RECENT ADVANCES**

LAQ-

RBC-

1. Enumerate disorders of iron metabolism. Describe its pathology and laboratory investigations for its diagnosis.(W-21)
2. Discuss protocol for laboratory diagnosis of haemoglobinopathy.(S-20)
3. Classify thalasseмии. Discuss etiopathogenesis and laboratory diagnosis of this disorder.(S-18)
4. Discuss classification and lab diagnosis of hemolytic anemia.(S-17)
5. Give an account on nutritional anaemias.(S-15)
6. Discuss classification,etiopathogenesis and diagnosis of Aplastic anaemia.(S-14)
7. Classify anemia and discuss in detail anemias of chronic disorders.(W-12)
8. Give an account of anemia in neonates.(W-12)

WBC

1. Classify plasma cell neoplasms. Discuss in detail molecular pathogenesis, diagnosis, differential diagnosis, prognosis and complications of multiple myeloma.(W-22)
2. Discuss critically recent WHO classification of myeloid leukemia.(S-22)
3. Discuss myelodysplasia and its genetic basis.(S-21)
4. Discuss cytogenetic abnormalities in haematological malignancies.(W-19)

5. What is immunophenotyping and what are various laboratory techniques for doing it? Discuss immunological classification of acute leukemias.(S-19)
6. What are myelodysplastic syndromes? Give their pathobiology,laboratory investigations and prognostic factors.(W-18)
7. Describe pathophysiology,laboratory diagnosis,differential diagnosis and prognostic markers in chronic lymphocytic leukemia.(W-17)
8. Classify and describe molecular pathogenesis,clinical and morphological features of chronic myeloproliferative disorders.(S-16)
9. Describe Chronic lymphoproliferative disorder(W-15)
10. Define MDS.Classify and discuss pathology and morphology.(W-14)
11. Describe pathophysiology,laboratory diagnosis,differential diagnosis and prognostic markers in chronic lymphocytic leukemia.(W-13)
12. Classify myeloproliferative disorders.Discuss the pathogenesis and morphology of myelofibrosis.(W-12)

PLATELETS AND COAGULATION DISORDERS

1. Classify thrombocytopenia.Discuss patho-physiology,laboratory diagnosis and differential diagnosis of primary immune thrombocytopenia.(W-22)
2. Define thrombophilia.Discuss etiology,pathology and laboratory investigations for its diagnosis.(W-21)
3. Discuss role of laboratory in investigating bleeding disorders.(S-21)
4. Write classification of bleeding disorders.Describe pathophysiology,laboratory diagnosis and prognosis of ITP in detail.(W-20)

5. Discuss platelet concentrate preparation, recent modification in the technique and principles of platelet transfusion. Add a note on platelet substitutes. (W-19)
6. Define bleeding diathesis. Enumerate the causes. How will you investigate a case of bleeding disorder? (W-18)
7. Write etiopathogenesis of disseminated intravascular coagulation. Write laboratory tests done in case of disseminated intravascular coagulation. (W-16)
8. Discuss platelets in health and diseases. (W-15)
9. Describe coagulation pathway, discuss defects in coagulation and approach to their diagnosis. (S-14)
10. Discuss platelets in health and disease. (W-12)

BLOOD TRANSFUSION

1. Discuss autologous blood transfusion. Write about synthetic blood. (W-20)
2. Discuss organization and legal concern of establishing blood bank. (S-20)
3. Investigation protocol in a case of blood transfusion reaction. (S-18)
4. Quality control in blood bank. (S-17)
5. Define haematopoietic stem cell. Discuss indications for hematopoietic stem cell transplant, site source and collection of stem cells. Write in brief about complications following hematopoietic cell transplant. (W-17)
6. Describe the etiology, pathogenesis and laboratory diagnosis of bleeding disorder syndrome. (S-17)
7. Give an account of quality control in blood bank. (W-16)
8. Describe clinically important blood groups. Describe procedures for blood group determination and compatibility testing. (S-16)
9. Discuss quality control in separation of blood components and blood banking. (W-14)
10. Define hematopoietic stem cell. Discuss indications for

haematopoietic stem cell transplant, site, sources and collection of stem cells. Write in brief about complications following hematopoietic stem cell transplant. (W-13)

MISCELLANEOUS

1. Discuss pancytopenia with special reference to its etiopathogenesis and laboratory evaluation. (S-22)
2. Discuss bone marrow examination under following headings : Indications; technique of BM aspiration and trephine biopsy including imprint smears; processing; special techniques; interpretation. (S-19)
3. Discuss automation in haematology. (S-15)
4. Describe components of bone marrow microenvironment and their interactions in health and diseases. (S-13)
5. Discuss the role of flow cytometry in haemato-pathology. (S-13)

SAQ-

RBC

1. Haemoglobin M. (W-22)
2. Membrane disorders of red cells. (W-22)
3. Discuss in brief autoimmune haemolytic anemias. (S-22)
4. Screening tests for G6PD deficiency. (S-21)
5. Write clinical features and laboratory diagnosis of Fanconi Anaemia. (W-19)
6. Discuss investigations in a suspected case of haemoglobinopathy, in short. (S-19)
7. Aplastic anemia. (W-18)
8. Polycythemia. (W-18)
9. Alpha thalassemia. (W-17)
10. Hyperhomocysteinemia. (W-17)
11. Sideroblastic anemia. (W-17)

12. Classification and diagnosis of immunohemolytic anaemias. (S-16)
13. Normocytic normochromic anaemia. (S-16)
14. Write in brief about molecular diagnosis of Haemoglobinopathies. (W-16)
15. Write in brief about aplastic anaemia. (W-16)
16. Write in brief about sideroblastic anaemia. (W-15)
17. Reversible sideroblastic anemia. (W-13)
18. Hyperhomocysteinemia. (W-13)
19. Alpha thalassemia. (W-13)
20. Pathogenesis of sickle cell disease. (W-12)
21. Paroxysmal Nocturnal Hemoglobinuria. (W-12)
22. Iron metabolism in human body. (W-12)

WBC

1. Qualitative disorders of leukocytes. (W-22)
2. Discuss role of flow cytometry in chronic lymphoproliferative disorders. (W-21)
3. Give an account of Haemophagocytic syndrome (W-21)
4. Discuss laboratory investigations for diagnosis and management of multiple myeloma. (W-21)
5. Give an account of JAK2 mutation. (W-21)
6. Discuss plasma cell dyscrasias. (S-21)
7. Minimal residual disease (MRD) in acute leukemia. (W-20)
8. Causes and diagnostic approach to neutropenia. (W-20)
9. Post chemotherapy blood and bone marrow regenerative changes in Childhood ALL. (S-20)

- 10.Enumerate various structural and functional Neutrophil Disorders and discuss in short.(W-19)
- 11.Describe paraproteinemias in short.(S-19)
- 12.Use of flow cytometry in typing of leukemias.(W-18)
- 13.Chronic eosinophilic leukemia.(S-18)
- 14.Cytogenetics and molecular abnormality in multiple myeloma.(S-18)
- 15.Secondary leukemia.(S-18)
- 16.Myelodysplastic-Myeloproliferative disorders.(W-17)
- 17.Hairy cell leukemia.(S-17)
- 18.Leukemoid reactions.(S-17)
- 19.Neutrophil disorders.(S-17)
- 20.Give an account of myelodysplastic syndrome.(W-16)
- 21.WHO classification of Acute leukemias.(S-16)
- 22.Discuss in brief about hairy cell leukemia.(S-15)
- 23.Discuss recent advances in MDS.(S-15)
- 24.Discuss Hemophagocytic syndrome.(S-15)
- 25.Langherhans cell histiocytosis.(W-14)
- 26.Granulocytic sarcoma.(W-14)
- 27.Grey zone lymphomas.(W-14)
- 28.Polycythemia vera.(S-14)
- 29.Cytochemical stains in acute leukemia.(S-14)
- 30.IHC studies in Lymphomas.(W-14)
- 31.Differential diagnosis of neutropenia.(W-13)
- 32.Primary effusion lymphoma(S-13)

33.MGUS(W-12)

34.Langerhans cell histiocytosis.(W-12)

PLATELETS AND COAGULATION DISORDERS-

1.Antiphospholipid syndrome-Recent Insights.(W-22)

2.Thrombin-activable Fibrinolysis Inhibitor.(W-22)

3.Platelet transfusion.(W-22)

4.Give an account of thrombocytosis. (S-22)

5.Influence of oxidative stress on stored platelets.(S-20)

6.Discuss pathophysiology and laboratory diagnosis of Von Willebrand Disease.(W-19)

7.Enumerate bleeding disorders and discuss investigations in a case of suspected bleeding disorders.(S-19)

8.Qualitative platelet disorder(S-18).

9.Thrombocytopenia.(S-16)

10.Discuss platelet aggregation study.(W-16)

11.Discuss in brief about DIC.(S-15)

12.VWD(Von Wilebrand Disease)(W-14)

13.Thrombophillia.(S-13)

14.ITP(W-12)

BLOOD TRANSFUSION

1.Give an account of recent advances in transfusion medicine.(S-22)

2.Discuss blood components.(S-22)

3.Discuss importance of use of irradiated blood and leukodepletion in transfusion.(W-21)

4. Discuss the transfusion transmitted infections.(W-21)
5. Autologous blood transfusion.(S-21)
6. Apheresis.(W-20)
7. TTD(Protozoal and bacterial) (S-20)
8. Umbilical cord blood banking.(S-20)
9. Write a short note on safe blood transfusion.(W-19)
10. What do you mean by blood safety? What are the principles of clinical transfusion practice?(S-19)
11. Umbilical cord stem cell transplantation.(W-18)
12. Blood transfusion in presence of abnormal antibodies.(W-18)
13. Massive transfusion.(S-18)
14. Synthetic blood products.(W-17)
15. Problems in paediatric blood transfusion.(S-17)
16. Discuss autologous stem cell transplantation in haematological malignancies.(W-16)
17. Blood transfusion reactions.(S-16)
18. Discuss about registers in blood bank and their importance.(W-15)
19. Give an account on autologous blood transfusion.(W-15)
20. Discuss National blood policy.(S-15)
21. Discuss in brief outline of quality assurance in blood bank.(S-15)
22. Bombay blood group.(W-14)

23.Blood components.(S-14)

24.Apheresis.(S-13)

25.Discuss Quality assurance and Quality control of various blood components.(S-13)

26.Blood components.(S-12)

INFECTION-

1. Discuss haematological markers of neonatal sepsis.(S-22)
2. Haematological manifestation of HIV.(S-20)
3. Haematological manifestation of malaria.(W-18)
4. Bone marrow changes in AIDS.(S-17)
5. EBV(S-14)
6. Hematologic manifestations of HIV infection.(S-12)
7. Infectious mononucleosis.(S-12)

MISCELLANEOUS

1. Write in brief about postsplenectomy haematological changes.(S-22)
2. Give an account of erythropoietin.(S-21)
- 3.Give an account of hypersplenism.(S-21)
- 4.Quality control in hematology laboratory.(S-21)
- 5.Haematological complications of pregnancy.(W-20)
- 6.Automated blood cell counters.(W-20)
- 7.Glycosylated hemoglobin.(W-20)
- 8.Thromboelastography(S-20)
- 9.Write a short note on autohaemolysins.(W-19)
- 10.What is importance of fetal haemoglobin in health and disease?(W-19)

11. Write in short about quality assurance in haematology laboratory.(S-19)
12. Discuss principle of flow cytometry and its uses in pathology practice. Also enumerate types of flow cytometers.(S-19)
13. Stem cell sources.(S-18)
14. Hyperviscosity syndrome.(W-17)
15. Automated cell counters(S-17)
16. Discuss role of flow cytometry in haematology.(W-16)
17. Stem cells in tissue homeostasis.(S-16)
18. Discuss limitations of automated cell counters.(W-15)
19. Write in brief about Hemolytic Uremic Syndrome.(W-15)
20. Give an account of hypersplenism.(W-15)
21. Perl's stain.(W-14)
22. Stem cells.(S-14)
23. Hyperviscosity syndrome.(W-13)
24. ADAMTS13(W-13)
25. Describe principles of chromatography and use of High Performance Liquid Chromatography.(S-13)
26. Gel technology in immune-haematology.(S-13)
27. Heparin.(W-12)
28. Flow cytometry.(W-12)
29. Hyperviscosity syndrome.(S-12)

**PAPER 4-RECENT ADVANCES INCLUDING
CLINICAL PATHOLOGY,
CHEMICAL PATHOLOGY,PATHOLOGY OF
INFECTIOUS DISEASES.**

LAQ-

CLINICAL PATHOLOGY

1. Discuss the role of serum enzymes as diagnostic tool in the diagnosis and prognosis of various diseases.(W-22)
2. Discuss a detailed account of investigations in a case of male infertility.(W-22)
3. Discuss laboratory investigation in case of meningitis.(W-21)
4. Discuss the laboratory investigations in a case of Malabsorption syndrome.(W-21)
5. 30 year old male working in IT company had severe chest pain. H/O angina in past. Discuss the line of investigations in this case.(S-21)
6. 28 years female had fever with chills,burning micturition and dysuria. How will you investigate this case? (S-21)
7. Discuss the role of serum enzymes as diagnostic tools in the diagnosis and prognosis of diseases.(W-20)
8. Describe the role of bronchial brushings,bronchial biopsy and BAL fluid examination in diagnosis of pulmonary diseases.(W-20)
9. Discuss in details laboratory work up for an elderly male with diabetes and an episode of angina recently.(S-20)
10. Describe design regularization,accreditation and legislation of laboratory.(W-19)
- 11.30 year old male presented with anasarca.Discuss different laboratory investigations in this case.(W-18)

- 12.Latest markers for early diagnosis of sepsis.(W-18)
- 13.Describe utility of laboratory investigations in a case of diabetes mellitus.(S-18)
- 14.Discuss laboratory investigations in malabsorption syndrome.(S-18)
- 15.Calibration and quality control in clinical laboratory.(W-17)
- 16.Liver function tests to classify hyperbilirubinemia.(S-17)
- 17.Laboratory investigations in the initial diagnosis and follow up for type-2 diabetes mellitus.(S-17)
- 18.Enumerate and discuss lab investigations for diagnosis and management of a diabetic patient with dyslipidemia.(W-16)
- 19.Discuss laboratory approach for the differential diagnosis of Jaundice.(S-16)
- 20.Give an account of Quality assurance in clinical and chemical pathology laboratory.(S-16)
- 21.Discuss etiopathogenesis and diagnosis of chronic renal failure.(W-15)
- 22.Discuss the current criteria for the diagnosis of Diabetes mellitus.(S-15)
- 23.Discuss clinical application of serum enzyme assays in health and disease.(S-15)
- 24.Describe role of laboratory in investigating a case of jaundice.(W-14)
- 25.Discuss general plan of evaluation of serous effusion. Add a note on recent advances in it.(W-14)
- 26.Discuss clinical application of Lipid Profile Test.(S-14)

27. 25 year male had high grade fever, nausea, vomiting and tender hepatomegaly. Discuss various and relevant liver function tests to arrive at diagnosis. (W-13)
28. Discuss in detail laboratory workup for an elderly male with hypertension and an episode of angina recently. (W-13)
29. Discuss chemical pathology of jaundice. (S-13)
30. Discuss role of laboratory in diagnosing and managing a patient of diabetes mellitus. Add a note on recent advances in diabetes mellitus (W-12)
31. Discuss laboratory workup of male infertility. (W-12)
32. Discuss chemical pathology in a case of acute renal failure. (S-12)

INFECTION

1. Discuss in details serodiagnosis of tuberculosis and write a note on MDR TB? (S-22)
2. Classify various viral haemorrhagic fevers. Describe pathophysiology and laboratory diagnosis of dengue fever and add a note on Zika Virus. (S-19)
3. Approach to diagnosis of Sexually transmitted diseases. (W-17)
4. Describe newer tests for diagnosis of tuberculosis with its interpretation and applications. (W-16)
5. Discuss clinicopathological features and lab diagnosis of leprosy. (W-15)
6. Recent advances in laboratory diagnosis of Tuberculosis infection with special reference to early detection of Multi-Drug Resistant tuberculosis (S-14)
7. Discuss the etiopathogenesis, morphology and consequences of malaria. (S-13)

SYSTEMIC PATHOLOGY

1. Recent advances in molecular diagnosis of paediatric soft tissue sarcomas.(W-19)
2. Discuss cutaneous pseudolymphoma.(S-19)
3. Describe the pathology of sudden unexpected infant death syndrome.(S-12)

CYTOLOGY

1. Discuss liquid based cytology for cervical screening?(S-22)

HAEMATOLGY

1. Discuss the causes of mono and polyclonal hyperglobulinemia.(S-20)

SAQ-

CLINICAL PATHOLOGY

- 1.Sputum examination(W-22)
- 2.Glycosylated haemoglobin(W-22)
- 3.Significance of urine microscopy.(W-22)
- 4.Cells in CSF.(S-22)
2. Supravital staining.(S-22)
- 3.Ketonuria(S-22)
- 4.Give an account of throid function tests.(W-21)
- 5.Give an account of tests for occult blood and their application.(W-21)
- 6.Cerebrospinal Fluid culture.(S-21)
- 7.Glycosylated haemoglobin.(S-21)
- 8.Utility of Lactate Dehydrogenase.(S-21)
- 9.Evaluation of Prostate Specific Antigen.(S-21)
- 10.Thyroid Function Tests.(S-21)
- 11.Synovial fluid assessment.(S-21)
- 12.Automation in clinical pathology.(W-20)
- 13.Microproteinuria.(S-20)
- 14.Exocrine pancreatic function tests.(S-20)
- 15.Write short note preservation of body fluid samples.(S-19)
- 16.What are recent advances in Automation in clinical pathology.(S-19)
- 17.Urinary and serum amylase.(W-18)
- 18.Semen analysis.(W-17)

19. Investigations in nephrotic syndrome.(S-17)
20. Semen analysis.(S-17)
21. Discuss lab investigations in diagnosis of pancreatitis.(W-16)
22. Discuss role of laboratory in investigating male infertility.(W-16)
23. Discuss stool examination in HIV/AIDS.(S-16)
24. Discuss semen analysis.(S-16)
25. Discuss cardiac biomarkers with special reference to recent advances.(S-16)
26. Discuss about occult blood in stool.(S-15)
27. Give an account of Ketone bodies.(S-15)
28. Discuss role of laboratory in evaluation of malabsorption.(W-14)
29. Discuss Serum electrolytes.(W-14)
30. Give an account of gestational diabetes.(W-14)
31. Discuss in brief adrenal function test.(W-14)
32. Laboratory aspects of patient monitoring during anti retroviral therapy.(S-14)
33. Triple test for high risk pregnancy.(S-14)
34. Stool examination.(W-13)
35. Exocrine pancreatic function tests.(W-13)
36. Assessment of mycobacteria in sputum.(W-13)
37. Microproteinuria.(W-13)
38. Give a brief account of thyroid function tests.((W-12)
39. Discuss synovial fluid analysis.(W-12)
40. Discuss laboratory work up of ischaemic heart disease.(W-12)

41. Discuss in brief investigations in case of pyrexia of unknown origin. (W-12)
42. Discuss automation in chemical pathology. (W-12)
43. Reducing substances in urine. (S-12)
44. Utility of serum LDH measurement. (S-12)

INFECTION

1. Opportunistic CNS infections. (S-20)
2. Tests for H.pylori. (W-19)
3. Zika virus. (W-19)
4. Laboratory diagnosis of Human Papilloma Virus infection in female genital tract. (W-19)
5. Describe etiology, epidemiology and pathology of Legionaire disease. (S-19)
6. Write a short about Neuritic Leprosy. (S-19)
7. Laboratory investigation in a case of PUO. (W-18)
8. Laboratory diagnosis of malaria. (S-18)
9. Pathology of lymphadenopathy caused by infectious agents. (S-18)
10. Hospital acquired infection and their prevention. (W-17)
11. Opportunistic infections. (S-17)
12. Newer techniques in diagnosis of malaria. (S-17)
13. Discuss lab diagnosis of swine flu. (W-16)
14. Discuss chlamydial infections. (W-16)
15. Recent advances in diagnosis of Malaria. (W-15)
16. Lab diagnosis of fungal infections. (W-15)

17. Discuss TORCH test.(S-15)
18. Give an account of diagnosis of sexually transmitted diseases.(W-14)
19. Discuss role of laboratory diagnosis of urinary tract infection.(W-14)
20. Tissue nematodes.(S-14)
21. Giant cells of infection.(S-13)
22. Zygomycetes lesions.(S-13)
23. Give an account of TORCH testing.(W-12)
24. Morphology of Hansen's disease.(S-12)
25. Lesions produced by Candida species.(S-12)

SYSTEMIC PATHOLOGY

1. Prion disease.(W-22)
2. Prion Diseases.(S-22)
3. Metabolic bone disease.(S-18)
4. Give an account of diagnostic investigations in Wilsons disease.(W-16)
5. Neuropathology of hypoxia.(S-12)

HAEMATOLGY

1. Protien C deficiency.(W-20)
2. Paroxysmal Nocturnal Haemoglobinuria.(W-20)
3. Role of cytochemistry in Haematology.(W-20)
4. Haematological manifestations of HIV.(W-20)

5. Discuss role of Flow cytometry in monitoring and treatment of leukemias.(S-19)
6. Automation in ESR.(W-19)
7. Umbilical cord stem cell transplantation.(W-17)
8. Coomb's test.(W-17)
9. Flow cytometry.(W-17)
10. Give an account of detection of porphyrins in urine.(W-16)
11. Antiphospholipid syndrome.(W-15)

TECHNIQUES-

1. Discuss in Situ Hybridization and its utility.(W-21)
2. Nanodiagnosis.(S-20)
3. Tissue microarray in pathology.(S-20)
4. Discuss technique and uses of Amniocentesis.(S-19)
5. Molecular techniques in histopathology.(W-18)
6. Spectrophotometry.(W-18)
7. Radioimmunoassay.(W-18)
8. Proteomics.(S-18)
9. Liquid based cytology.(S-18)
10. High pressure(precision) liquid chromatography.(S-18)
11. Virtual autopsy.(S-17)
12. Discuss immunoelectrophoresis and its diagnostic utility.(W-16)
13. BAL(W-15)
14. Testicular biopsy.(W-15)

- 15.Thin layer liquid based cytology in cervical cancer.(S-14)
- 16.Tissue microarray.(W-13)
- 17.PCR.(W-13)
- 18.Nanotechnology.(S-13)
- 19.Electron microscopy.(S-13)
- 20.Proteomics.(S-12)

MISCELLANEOUS

- 1.Tumor markers(W-22)
- 2.Universal precautions for performing autopsy.(W-22)
- 3.Histolpathologist and Internet.(S-22)
- 4.Quality control in surgical path lab (S-22)
- 5.Discuss tumor markers and their utility in practice.(W-21)
- 6.Biomedical waste disposal in pathology.(W-21)
- 7.Quality control in surgical pathology.(W-20)
- 8.Serological tumor markers.(S-20)
- 9.The importance of social media to pathology.(W-19)
- 10.Segregation of biomedical waste 2016 Rule.(W-19)
- 11.Quality control practices in laboratory.(W-18)
- 12.Disposal of biomedical solid waste.(W-17)
- 13.Paraneoplastic syndrome.(S-17)
- 14.Discuss vit. D3 levels in health and disease.(S-16)
- 15.Discuss relationship between diet and cancer.(S-16)
- 16.Bioterrorism.(W-15)

17. Write in brief about Tumour markers.(S-15)
18. Write in brief about NABL accreditation.(S-15)
19. Telepathology.(S-15)
20. Biosafety precautions in chemical laboratory.(S-14)
21. Agents of Bio-terrorism.(S-14)
22. Gene expression profiling.(S-13)
23. Carcinoembryonic antigen.(S-13)

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