Time : 3 hours
Max. Marks : 100

Attempt all questions in order.
Each question carries 10 marks.

1. Define myocarditis and discuss its major causes, pathogenesis and diagnostic modalities. 1+3+3+3

2. Enumerate the various causes of neonatal cholestasis. Describe the morphological features of liver biopsy including ancillary tests to distinguish between the various causes. 3+7

3. Discuss the ISN-RPS classification of lupus nephritis. Describe the features on light microscopy, direct immunofluorescence and electron microscopy of classes IV and V. 4+6

4. Describe the etio-pathogenesis of mesothelioma. What is its morphologic variant? Give details of the use of immunohistochemistry in the differential diagnosis of mesothelioma. 3+3+4

5. Write short notes on:
   b. Pathology of Alzheimer’s diseases. 6+4

6. What are the various causes of necrotizing lesions of upper airways? Discuss the diagnostic approach, histomorphology and use of ancillary techniques in arriving at a diagnosis. 3+7

7. Describe the utility of core needle biopsy Vs FNAC in diagnosis of non palpable mammographically detected lesions of the breast. How are these lesions classified and what are ‘high risk’ lesions? What immunohistochemistry can be of use in the differential diagnosis? 3+4+3

8. Classify vesiculo-bullous lesions of skin. Discuss the role of immunofluorescence in its diagnosis. 6+4

9. Enumerate the non-neoplastic and neoplastic lesions of bone rich in osteoblast like giant cells. Give the gross, microscopic and X-ray findings of two of these lesions which occur in the epiphysis of long bones. 5+5

10. Write short notes on:
    a. Hashimoto thyroiditis.
    b. Etiopathogenesis and pathology of pancreatitis. 5+5

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POSESSION / USE OF CELL PHONES OR ANY SUCH ELECTRONIC GADGETS IS NOT PERMITTED INSIDE THE EXAMINATION HALL.
Pathology
Paper –II

Time : 3 hours
Max. Marks : 100

Attempt all questions in order.
Each question carries 10 marks.

1. Define and classify anemia of chronic disease. What is its pathogenesis and management. 5+5

2. Classify immune hemolytic anemia. Discuss the pathogenesis of warm and cold antibody type autoimmune hemolytic anemias. Discuss in brief Immunologic tolerance. 1+4+5

3. Enlist various diseases under the category of chronic lympho-proliferative disorders. Give the role of flow-cytometry with the panel of markers required for diagnosis and detection of residual disease. 4+6

4. Discuss the principle behind the working of semi automated, fully automated and five part differential blood cell counters. 3+3+4

5. Describe and classify functional disorders of leukocytes. What are their clinico-pathologic features and diagnostic modalities? 5+5

6. Describe the diagnostic criteria for multiple myeloma and MGUS. What is monoclonal gammopathy of renal significance? 8+2

7. Give the diagnostic algorithm in a patient of bleeding disorder. What are the various qualitative platelet defects and how are they diagnosed? 6+4

8. Give the WHO classification of myeloproliferative neoplasms. Which are the molecular markers used for diagnosis of these disorders. Give the pathogenesis and morphology of primary myelofibrosis. 1+3+6

9. What is the role of nucleic acid testing (NAT) laboratory in Transfusion Medicine? Discuss in brief Hemolytic Transfusion Reactions. 5+5

10. How will you diagnose a case of acute myelomonocytic leukemia? Discuss the prognostic factors of acute lymphoblastic leukemia. 5+5

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Possession / use of cell phones or any such electronic gadgets is not permitted inside the examination hall.
Time : 3 hours  
Max. Marks : 100  

Attempt all questions in order.  
Each question carries 10 marks.

1. What is the principle and technology of liquid based cytology? What are its advantages and diagnostic pitfalls?  
   6+4

2. Discuss the role of FNAC in the diagnosis of various thyroid tumours.  
   10

3. Give the method of processing of broncho-alveolar lavage (BAL) fluid for cytology. Describe the cytology of specific diseases effectively diagnosed by BAL cytology.  
   5+5

4. Discuss the pathogenesis of carcinoma of uterine cervix. What are the low and high risk HPVs. Describe various techniques for testing HPV.  
   3+2+5

5. What is Microalbuminuria? Describe the various methods for testing for Microalbuminuria and what is its significance?  
   3+3+4

6. Describe the aetio-pathogenesis of chronic liver failure. Enlist various liver function tests and detail the ones which would be useful in diagnosis of chronic liver failure.  
   5+5

7. Write short notes on:  
   a. Bone changes in chronic renal failure.  
   b. Laboratory parameters in a case of myocardial infarction.  
   5+5

8. Enlist the various causes of malabsorption syndrome. How is the clinical, laboratory and pathologic evaluation of malabsorption syndrome done?  
   5+5

9. Describe the role of cytology in the evaluation of hormonal status. What are the techniques and indices used?  
   2+(4+4)

10. Describe the techniques used in evaluation of the urinary cytology. What are their specific uses in renal transplantation and urinary tract malignancies?  
    3+(4+3)
PATHOLOGY
PAPER –IV

Time : 3 hours
Max. Marks : 100

Attempt all questions in order.
Each question carries 10 marks.

1. Discuss the classification and morphology of leprosy. What are the various reactions encountered in leprosy. 7+3

2. Write short notes on:
   a. Polarising microscopy in diagnostic pathology
   b. Role of prostaglandins in acute inflammation 5+5

3. What is Epithelial Mesenchymal Transition (EMT)? What are its molecular pathways and significance in malignancy? 4+3+3

4. Write short notes on:
   b. Plasticity of stem cells and its clinical significance. 5+5

5. Define innate and adaptive immunity. Describe the cellular and molecular mechanisms of innate immunity. 3+7

6. Describe the various mechanisms of recognition and rejection of allografts. Describe in brief the morphology, immunocytochemistry and electron microscopy of chronic antibody mediated kidney transplant rejection. 7+3

7. Give the various causes with examples of genetic predisposition to cancer. What is the interaction between genetic and non genetic factors? 7+3

8. Write short notes on:
   a. Gene microarray technology
   b. Tissue microarrays 7+3

9. Describe the genetic abnormalities, pathophysiology and clinical correlation of cystic fibrosis (mucoviscidosis). 4+3+3

10. Enlist the various lysosomal disorders along with their specific defects. Describe the clinical features and pathology of different types of Niemann-Pick disease. 4+6

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