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MANIPAL ACADEMY OF HIGHER EDUCATION
MD (PATHOLOGY) DEGREE EXAMINATION – APRIL 2022

PAPER I

Friday, April 01, 2022

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

✍ **Answer all the questions:**

✍ **Long Essays:**

1. Describe the mechanisms of angiogenesis in healing and repair.

(15 marks)

2. Discuss the prognostic markers and mechanisms of metastasis.

(15 marks)

3. **Write short notes on:**

3A. Automation in cytology

3B. Toll- like receptors

3C. Role of p-53 gene in neoplasia

3D. Type I hypersensitivity reaction

3E. Mechanism of cellular aging

3F. Oncogenic DNA viruses

3G. Turner syndrome

3H. Role of platelet activating factor in inflammation

3I. Intracellular accumulations

3J. Gaucher disease

(7 marks × 10 = 70 marks)



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PAPER II

Saturday, April 02, 2022

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

1. Discuss in detail the BANFF classification of renal transplant rejection.
(15 marks)
2. Classify cutaneous Lymphoproliferative disorders. Add a brief note on Mycosis Fungoides
(15 marks)
3. **Short notes:**
 - 3A. Etiopathogenesis of Atherosclerosis
 - 3B. Classify neuroendocrine disorders of the gastrointestinal tract
 - 3C. Pathogenesis of Hepatocellular carcinoma
 - 3D. Renal tumours of childhood
 - 3E. Large vessel vasculitis
 - 3F. Interstitial lung disorders
 - 3G. ITGCN
 - 3H. Medullary carcinoma of the breast
 - 3I. Classify lymphocytic thyroiditis. Discuss the pathogenesis of lesions presenting with altered thyroid function tests.
 - 3J. Reed Sternberg cell

(7 marks × 10 = 70 marks)



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PAPER III

Monday, April 04, 2022

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

1. Classify and discuss the recent concepts of Myelodysplastic syndrome.
(15 marks)
2. Discuss the principles in cell counters. Enumerate the newer parameters in cell counters and their significance in clinical practice
(15 marks)
3. **Write short notes on:**
 - 3A. Pathophysiologic aspects of HbF in acquired hematologic disorders
 - 3B. Antiphospholipid syndrome
 - 3C. Platelet transfusion
 - 3D. Genetic basis of von Willebrand disease
 - 3E. Haematologic manifestations of renal disease
 - 3F. Waldenstrom macroglobulinemia
 - 3G. Lab approach to prolonged APTT
 - 3H. Bone marrow findings in HIV
 - 3I. bcr-abl mutation
 - 3J. Interpretation of Serum Iron profile

(7 marks × 10 = 70 marks)



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PAPER IV

Tuesday, April 05, 2022

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

1. Describe in detail the role of immunohistochemistry in evaluation of soft tissue tumors.
(15 marks)
2. Discuss in detail columnar cell lesions of breast.
(15 marks)
3. **Write short notes on:**
 - 3A. CISH
 - 3B. Flow cytometry and its application
 - 3C. Tissue microarray
 - 3D. Genomic imprinting
 - 3E. Recent advances in classification of lung tumors
 - 3F. Image analysis
 - 3G. Quality control measures in the laboratory
 - 3H. Discuss the role of immunofluorescence in renal biopsy
 - 3I. PECOMA
 - 3J. Role of Her-2-neu in gastric adenocarcinoma

(7 marks × 10 = 70 marks)

