

Reg. No.

MANIPAL ACADEMY OF HIGHER EDUCATION
MD (PATHOLOGY) DEGREE EXAMINATION – MAY 2021
PAPER I

Monday, May 03, 2021

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

Answer all the questions:

Long Essays:

1. Discuss apoptosis in health and disease.

(15 marks)

2. Discuss quality assurance in cytology.

(15 marks)

Write short notes on:

3A. Lysosomal storage disorders

3B. Role of angiogenesis in neoplasia

3C. Matrix metalloproteinases

3D. Hypercoagulable states

3E. Telomeres

3F. Role of stem cells in tissue homeostasis

3G. Substance P

3H. Role of molecular markers in the prognosis of cancer

3I. The endothelial cell in health and disease

3J. Immunological tolerance

(7 marks × 10 = 70 marks)



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PAPER II

Tuesday, May 04, 2021

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

 **Answer all the questions:**

 **Long Essays:**

1. Discuss the pathology of vasculitis.

(15 marks)

2. Discuss the role of endoscopic biopsy in the diagnosis of gastrointestinal diseases

(15 marks)

3. **Write short notes on:**

3A. Fibrolamellar carcinoma

3B. Acute respiratory distress syndrome

3C. Molecular biology of squamous cell carcinoma

3D. Cutaneous pseudolymphoma

3E. Sclerosing retroperitonitis

3F. Hemangioblastoma

3G. Pathogenesis of glomerular injury

3H. Crystal induced arthritis

3I. Gastrointestinal stromal tumors

3J. Gleason grading system

(7 marks × 10 = 70 marks)



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PAPER III

Wednesday, May 05, 2021

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

✍ **Answer all the questions:**

✍ **Long Essays:**

1. Discuss the principle of flowcytometry. Give the applications of flowcytometry in non neoplastic hematologic conditions.

(15 marks)

2. Discuss the causes of erythroid dysplasia. Add a note on classification and lab diagnosis of congenital dyserythropoeitic anemia.

(15 marks)

3. **Write short notes on:**

3A. Hb H disease

3B. Principles used in automated cell counters

3C. Applications of plasma pheresis

3D. Bone marrow changes associated with HIV infection

3E. Staging of CLL

3F. Pathophysiology of Antiphospholipid antibody syndrome

3G. Lab diagnosis of Polycythemia Vera

3H. Pregnancy related coagulation disorders

3I. Myeloid proliferations associated with Downs syndrome

3J. Antibody screening in blood bank

(7 marks × 10 = 70 marks)



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PAPER IV

Thursday, May 06, 2021

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

✍ **Answer all the questions:**

✍ **Long Essays:**

1. Discuss the various spindle cell tumors of the uterus and the role of immunohistochemistry in the diagnosis. (15 marks)

2. Discuss the pitfalls in the diagnosis of a solitary nodule of the thyroid. (15 marks)

3. **Write short notes on:**

3A. Tissue microarray

3B. Dysplasia of lower gastrointestinal tract

3C. Role of Direct immunofluorescence in kidney biopsies

3D. Nonalcoholic fatty liver disease

3E. Glandular lesions of the cervix

3F. New WHO classification of lung tumors

3G. Recent concepts in colorectal carcinoma

3H. Diagnosis and molecular pathology of Hirschsprung disease

3I. Clinical applications of flow cytometry

3J. Precancerous oral lesions

(7 marks × 10 = 70 marks)

