Reg. No.										

MANIPAL ACADEMY OF HIGHER EDUCATION

MD (PATHOLOGY) DEGREE EXAMINATION – JULY 2025

PAPER I

Wednesday, July 09, 2025

Time: 14:00 – 17:00 Hrs. Max. Marks: 100

- **Answer all the questions:**
- **Illustrate your answers with diagrams wherever necessary.**

- **Long Essays:**

1. Discuss the role of tumor suppressor genes in neoplasia. Add a note on Epigenetic changes.

2. Discuss the role of endothelium in health and disease.

(15 marks × 2 = 30 marks)

3. **Write short notes on:**

3A. Classification and pathogenesis of amyloidosis.
3B. Role of liquid biopsy in tumor diagnosis.
3C. Pathogenesis and complications of thrombosis.
3D. Functional leucocyte abnormalities.
3E. Mechanism of cellular ageing.
3F. Mechanism of T cell immunodeficiency in HIV infection.
3G. Quality assurance in cytology lab.
3H. Bethesda System for Reporting Thyroid Cytopathology.
3I. Role of free radicals in cell injury.
3J. Mechanism of Apoptosis with the help of a diagram.

(7 marks × 10 = 70 marks)

Reg. No.										

MANIPAL ACADEMY OF HIGHER EDUCATION

MD (PATHOLOGY) DEGREE EXAMINATION – JULY 2025

PAPER II

Thursday, July 10, 2025

Time: 14:00 – 17:00 Hrs. Max. Marks: 100

- **Answer ALL questions.**
- **Illustrate your answers with diagrams wherever necessary**

- **Long Essays:**

1. Discuss the diagnostic approach and role of immunohistochemistry in the diagnosis of small round blue cell tumors.

2. Discuss the pathogenesis of type II diabetes mellitus and its complications.

(15marks × 2 = 30 marks)

3. **Write short notes on:**

3A. Discuss the immunohistochemistry and differential diagnosis of gastrointestinal stromal tumors.
3B. Discuss the prognostic and predictive factors of breast cancer.
3C. Discuss mesenchymal tumors of kidney.
3D. Pathogenesis of Alzheimer's disease.
3E. Describe the pathogenesis and morphology of cardiomyopathies.
3F. List and describe the pathology of gestational trophoblastic tumors.
3G. Discuss the pathology of interstitial lung disease.
3H. Discuss the diagnostic approach of anterior mediastinal mass.
3I. Pathology of cystic lesions of the liver.
3J. Premalignant skin lesions.

(7 marks × 10 = 70 marks)

Reg. No.										

MANIPAL ACADEMY OF HIGHER EDUCATION

MD (PATHOLOGY) DEGREE EXAMINATION – JULY 2025

PAPER III

Friday, July 11, 2025

Time: 14:00 – 17:00 Hrs. Max. Marks: 100

- **Answer ALL questions.**
- **Illustrate your answers with diagrams wherever necessary**

- **Long Essays:**

1. Discuss the principle of automated cell counters. Enumerate its role in nonmalignant RBC disorders.
2. Discuss the quality control in blood banking.

(15 marks × 2 = 30 marks)

3. **Write short notes on:**

3A. HPLC in hematological disorders.
3B. Laboratory diagnosis of myelodysplastic syndrome.
3C. Laboratory approach to plasma cell dyscrasias.
3D. Philadelphia chromosome.
3E. Neonatal anemia.
3F. Measurable residual disease in B - Acute lymphoblastic lymphoma.
3G. Platelet Indices.
3H. Automation in urine analysis.
3I. Laboratory tests for lupus anticoagulants.
3J. Mixing studies in coagulation disorders.

(7 marks × 10 = 70 marks)

Reg. No.										

MANIPAL ACADEMY OF HIGHER EDUCATION

MD (PATHOLOGY) DEGREE EXAMINATION – JULY 2025

PAPER IV

Saturday, July 12, 2025

Time: 14:00 – 17:00 Hrs. Max. Marks: 100

- **Answer ALL questions.**
- **Illustrate your answers with diagrams wherever necessary**

- **Long Essays:**

1. Discuss the changes introduced in WHO classification of endocrine tumors in 2022 on nomenclature and histopathological diagnosis of follicular-derived thyroid neoplasms.

2. Discuss the evaluation of hepatic nodules. Elaborate on hepatic adenomas.

(15 marks × 2 = 30 marks)

3. **Write short notes on:**

3A. Low and ultra-low HER2 in human breast cancer.
3B. Long COVID in immunocompromised and immunocompetent patients.
3C. Significance of atypical urothelial cells in Paris system for reporting urine cytology.
3D. PDL1 testing and its uses.
3E. IgG4 related diseases.
3F. Pathogenesis of Alzheimer disease.
3G. Use of liquid based cytology in non-gynecologic malignancies.
3H. Computational pathology.
3I. Compare CISH and FISH.
3J. Approach to eosinophilic renal neoplasms.

(7 marks × 10 = 70 marks)