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**MANIPAL ACADEMY OF HIGHER EDUCATION**  
**MD (PHYSIOLOGY) DEGREE EXAMINATION – JANUARY 2025**

**PAPER I**  
**(OLD SCHEME)**

Tuesday, January 14, 2025

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

✍ **Answer All questions.**

✍ **Draw diagrams wherever necessary.**

✍ **Long Essays:**

1. Describe the process of Excitation- Contraction coupling in skeletal muscle. Compare it with that in smooth muscle.

(15 marks)

2. Discuss the effects of training in athletes on cardiovascular and respiratory systems.

(15 marks)

3. **Write short essays on:**

3A. Role of lymphocytes in immunity.

3B. Fibrinolytic system.

3C. Active transport.

3D. Hermann von Helmholtz contributions to Physiology.

3E. Receptor regulation.

3F. Cell adhesion molecules.

3G. Genesis of Resting Membrane Potential (RMP). What will be the impact of major electrolyte disorders on RMP?

3H. Estimation of body fluids.

3I. DNA polymorphism.

3J. Blood transfusion.

(7 marks × 10 = 70 marks)



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**MANIPAL ACADEMY OF HIGHER EDUCATION**  
**MD (PATHOLOGY) DEGREE EXAMINATION – JANUARY 2025**

**PAPER II**  
**(REGULAR & REPEATER)**

Wednesday, January 15, 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 approach to follicular-patterned lesions of thyroid. (15 marks)

2. Describe the role of small intestinal biopsies in assessment of malabsorption syndromes. (15 marks)

3. **Write short notes on:**

- 3A. Ocular surface squamous neoplasia
- 3B. Skin biopsy in leprosy
- 3C. Autoimmune pancreatitis
- 3D. Granulomatosis with polyangiitis
- 3E. Giant cell-rich tumors of bone
- 3F. Discuss the predictive factors in carcinoma breast
- 3G. Hereditary leiomyomatosis and renal cell carcinoma
- 3H. Ductal adenocarcinoma of prostate
- 3I. Molecular classification of endometrial carcinoma.
- 3J. Anaplastic large cell lymphoma

(7 marks × 10 = 70 marks)

