

**MANIPAL ACADEMY OF HIGHER EDUCATION**  
**MD (PHARMACOLOGY) DEGREE EXAMINATION – OCTOBER 2020**  
**SUBJECT: PAPER I: GENERAL PHARMACOLOGICAL PRINCIPLES AND APPLIED SCIENCES**

Monday, October 05, 2020

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

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✍ **Answer ALL the questions.**

✍ **Essay Questions:**

1. Discuss on various factors affecting absorption of a drug. (15 marks)

2. Discuss G –protein coupled receptors (GPCR). (15 marks)

3. **Write briefly on:**

3A. Alexander Fleming

3B. High-performance liquid chromatography (HPLC)

3C. Pharmacogenetics

3D. Enzyme induction

3E. Bioequivalence

3F. Placebo

3G. Pathological diseases modifying drug action

3H. Clinical significance of plasma protein binding

3I. Drug compendia

3J. Drug dependence

(7 marks × 10 = 70 marks)



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**MANIPAL ACADEMY OF HIGHER EDUCATION**  
**MD (PHARMACOLOGY) DEGREE EXAMINATION – OCTOBER 2020**  
**SUBJECT: PAPER II: SYSTEMIC PHARMACOLOGY, CHEMOTHERAPY AND THERAPEUTICS**

Tuesday, October 06, 2020

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

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✍ **Answer ALL the questions.**

✍ **Essay Questions:**

1. Discuss the pharmacotherapy of bronchial asthma. (15 marks)
  
2. Discuss the role of opioids in pain control. (15 marks)

3. **Write briefly on:**

- 3A. Neurological side effects of antipsychotic drugs
- 3B. Amantadine
- 3C. Drug therapy in Alzheimers disease
- 3D. Furosemide
- 3E. Parenteral vasodilators
- 3F. Alteplase
- 3G. Uricosuric agents
- 3H. Uses of Oxytocin
- 3I. Diabetic ketoacidosis - Management
- 3J. DNA gyrase inhibitors

(7 marks × 10 = 70 marks)



**MANIPAL ACADEMY OF HIGHER EDUCATION****MD (PHARMACOLOGY) DEGREE EXAMINATION – OCTOBER 2020****SUBJECT: PAPER III: EXPERIMENTAL PHARMACOLOGY, BIOASSAY AND STATISTICS**

Wednesday, October 07, 2020

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

✍ Answer ALL the questions.

✍ Essay Questions:

1. Discuss the screening methods to evaluate a compound for antihypertensive activity.  
(15 marks)
2. Discuss the toxicity studies conducted in animals prior to initiation of clinical trial of the drug.  
(15 marks)
3. Write briefly on:
  - 3A. Anesthetics used in lab animals
  - 3B. Behavioural assessment of antidepressant activity in rodents
  - 3C. Assay of antiulcer agents
  - 3D. Blood collection method in rats
  - 3E. Chronic inflammatory animal models for screening drugs
  - 3F. Transgenic mice
  - 3G. Sample size estimation for a study
  - 3H. “t” test in statistics
  - 3I. Estrous cycle in rats
  - 3J. Cumulative dose response

(7 marks × 10 = 70 marks)



**MANIPAL ACADEMY OF HIGHER EDUCATION**  
**MD (PHARMACOLOGY) DEGREE EXAMINATION – OCTOBER 2020**  
**SUBJECT: PAPER IV: CLINICAL PHARMACOLOGY AND RECENT ADVANCES**

Thursday, October 08, 2020

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

✍ **Answer ALL the questions.**

✍ **Essay Questions:**

1. Discuss pharmacovigilance and its impact on Indian set up.

(15 marks)

2. Discuss the drugs modulating GABAergic transmission.

(15 marks)

3. **Write briefly on:**

3A. Good Laboratory Practice

3B. Informed consent

3C. Therapeutic drug monitoring

3D. Meta-analysis

3E. Cinacalcet

3F. Post marketing surveillance

3G. Deflazacort

3H. Cost-effective analysis

3I. Histone deacetylase inhibitors

3J. Ticagrelor

(7 marks × 10 = 70 marks)

