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# MANIPAL ACADEMY OF HIGHER EDUCATION

## MD (PHARMACOLOGY) DEGREE EXAMINATION – APRIL 2018

SUBJECT: PAPER I: GENERAL PHARMACOLOGICAL PRINCIPLES AND APPLIED SCIENCES

Monday, April 02, 2018

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

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✍ **Answer ALL the questions.**

✍ **Essay Questions:**

1. Discuss the role of voltage gated ion channels as targets of drug action. (15 marks)

2. Explain the coagulation cascade and discuss warfarin as an anticoagulant. (15 marks)

3. **Write briefly on:**

3A. Chronotherapeutics

3B. Membrane transporters and adverse drug reactions

3C. Target concentration strategy and drug dosing

3D. Excitotoxicity in CNS

3E. Nitrate tolerance

3F. Therapeutic index

3G. MTT assay

3H. Receptor upregulation

3I. Risk category of drugs used in pregnancy

3J. Transdermal drug delivery

(7 marks × 10 = 70 marks)



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**MANIPAL ACADEMY OF HIGHER EDUCATION**

**MD (PHARMACOLOGY) DEGREE EXAMINATION – APRIL 2018**

**SUBJECT: PAPER II: SYSTEMIC PHARMACOLOGY, CHEMOTHERAPY AND THERAPEUTICS**

Tuesday, April 03, 2018

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

✍ **Answer ALL the questions.**

✍ **Essay Questions:**

1. Discuss in brief intravenous general anesthetics.

(15 marks)

2. Discuss various sodium channel blocking drugs.

(15 marks)

3. **Write briefly on:**

3A. Paclitaxel

3B. Low molecular weight heparins

3C. Limitations of proton pump inhibitors

3D. Molecular mechanisms of glucocorticoids

3E. Radioactive iodine

3F. Newer drugs for HIV infection

3G. Zoledronate

3H. Acarbose

3I. Management of cerebral malaria

3J. Parenteral iron preparations

(7 marks × 10 = 70 marks)



**MANIPAL ACADEMY OF HIGHER EDUCATION****MD (PHARMACOLOGY) DEGREE EXAMINATION – APRIL 2018****SUBJECT: PAPER III: EXPERIMENTAL PHARMACOLOGY, BIOASSAY AND STATISTICS**

Wednesday, April 04, 2018

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

- ✘ **Answer ALL the questions.**
- ✘ **Write your answers that are brief, clear, relevant and legible.**
- ✘ **Illustrate your answers with neatly drawn and correctly labeled diagrams wherever appropriate.**
- ✘ **Essay questions:**
1. Discuss the various animal models for screening of drugs for potential antihypertensive activity.  
(15 marks)
2. Describe the various preclinical toxicity studies done as a prerequisite for clinical trials in India.  
(15 marks)
3. **Write briefly on:**
- 3A. Current status of bioassay
- 3B. Blood collection methods in rats
- 3C. Odds ratio
- 3D. Screening methods for drugs used in peptic ulcer
- 3E. Rabbit as an experimental animal
- 3F. Measures of central tendency
- 3G. Euthanasia for experimental animals
- 3H. Induction of diabetes mellitus in experimental animals
- 3I. Kaplan Meier curves
- 3J. Analysis of variance

(7 marks × 10 = 70 marks)



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**MANIPAL ACADEMY OF HIGHER EDUCATION**  
**MD (PHARMACOLOGY) DEGREE EXAMINATION – APRIL 2018**  
**SUBJECT: PAPER IV: CLINICAL PHARMACOLOGY AND RECENT ADVANCES**

Thursday, April 05, 2018

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

- ✍ **Answer ALL the questions.**
- ✍ **Write your answers that are brief, clear, relevant and legible.**
- ✍ **Illustrate your answers with neatly drawn and correctly labeled diagrams wherever appropriate.**

✍ **Essay Questions:**

1. Explain the role of vitamin D in disease and therapy. (15 marks)

2. Discuss the pharmacodynamics of aspirin in comparison with the other NSAIDs. (15 marks)

**3. Write briefly on:**

- 3A. Biopharmaceuticals
- 3B. Prophylactic drugs used in gout and hyperuricemia
- 3C. Randomized controlled clinical trials
- 3D. Rational prescribing of antimicrobials
- 3E. New drug application
- 3F. CDSCO
- 3G. Drug utilization studies
- 3H. Epigenetic targets in therapy
- 3I. Ferric carboxymaltose
- 3J. Novel classes of bronchodilators

(7 marks × 10 = 70 marks)

