

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

Wednesday, June 03, 2020

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 labelled diagrams wherever appropriate.

✍ Essay Questions:

1. Explain the different ways by which molecules cross cell membranes. (15 marks)
2. Explain in brief the physiology of urine formation and outline the drugs affecting it. (15 marks)

3. Write briefly on:

- 3A. Calcium as a second messenger
- 3B. Adverse effects that occur on chronic administration of drugs
- 3C. Prodrugs
- 3D. Pharmacogenomic tests for drug responsiveness
- 3E. Sources of drug information
- 3F. Significance of dose-response-curve
- 3G. History of anti-diabetic therapeutics
- 3H. Influence of circadian rhythm on pharmacodynamics
- 3I. Concept of partial agonism, antagonism and inverse agonism
- 3J. Implications of microsomal enzyme induction and inhibition

(7 marks × 10 = 70 marks)



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

Thursday, June 04, 2020

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

✍ **Essay Questions:**

1. Discuss the role of parenteral anticoagulants in therapy
(15 marks)

2. Discuss the first line drugs used in tuberculosis. Add a note on current treatment guidelines for tuberculosis.
(15 marks)

3. Write briefly on:

- 3A. Vasicoselective anticholinergic drugs
- 3B. Management of acute severe bronchial asthma
- 3C. Drugs used for the treatment of cancer pain
- 3D. Triptans
- 3E. Osmotic laxatives
- 3F. Amiodarone
- 3G. Insulin analogs
- 3H. Uses of gonadotropins
- 3I. Isoflurane
- 3J. Platinum coordinated complexes

(7 marks × 10 = 70 marks)



MANIPAL ACADEMY OF HIGHER EDUCATION

MD (PHARMACOLOGY) DEGREE EXAMINATION – JUNE 2020

SUBJECT: PAPER III: EXPERIMENTAL PHARMACOLOGY, BIOASSAY AND STATISTICS

Friday, June 05, 2020

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. Describe the various methods employed to avoid bias in clinical trials. Add a note on sampling methods.

(15 marks)

2. Discuss the animal models for screening new compounds for their potential anti-inflammatory activity.

(15 marks)

3. Write briefly on:

- 3A. General anaesthetics used in animals
- 3B. Ame's test
- 3C. Animal ethics committee
- 3D. Limitations of preclinical toxicity testing
- 3E. Rota rod test
- 3F. Methods of blood collection in laboratory animals
- 3G. Screening methods for antiarrhythmic drugs
- 3H. Biostandardization
- 3I. Principles of bioassay
- 3J. Rabbit as an experimental animal

(7 marks × 10 = 70 marks)



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

Saturday, June 06, 2020

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

✍ Essay Questions:

1. Design a protocol for evaluation of a drug in congestive cardiac failure. (15 marks)

2. Discuss the recent advances in treatment of osteoporosis. (15 marks)

3. Write briefly on:

- 3A. Post marketing surveillance
- 3B. Essential drug concept
- 3C. Conflict of interest
- 3D. Ecopharmacovigilance
- 3E. Good Manufacturing Practice guidelines
- 3F. Pegloticase
- 3G. Eplerenone
- 3H. Methods to prevent adverse drug reaction
- 3I. Pleiotropic effects of statins
- 3J. Topical antifungal agents

(7 marks × 10 = 70 marks)

