

MANIPAL UNIVERSITY

M. PHARM. PART-I DEGREE EXAMINATION – MAY/JUNE 2012

SUBJECT: ADVANCED PHARMACOLOGY (PHA 601)

(SPECIALIZATION: PHARMACOLOGY)

Saturday, May 26, 2012

Time: 10:00 – 13:00 Hrs.

Max. Marks: 100

✍ **Answer all questions.**

- 1A. Discuss the signaling mechanisms of G-protein coupled receptors.
- 1B. With a neat picture describe the physiology of skeletal muscle contraction. Discuss the mechanisms of action of different classes of drugs that affect the tone of the muscle.
(10+10 = 20 marks)
- 2A. Discuss the mechanisms of the effects on central biogenic amines of neuroleptic agents.
- 2B. Discuss the mechanisms of action of antianginal drugs and add a note on antianginal combination.
(10+10 = 20 marks)
- 3A. Discuss the physiology of urine formation. How do the various diuretics act?
- 3B. Describe the mechanism of cellular immunity. How do immunosuppressants interfere with cellular immunity?
(10+10 = 20 marks)
- 4A. Discuss the cellular and molecular level mechanisms of steroidal drug actions.
- 4B. Discuss the mechanisms of antiviral agents.
(10+10 = 20 marks)
- 5. Write short notes on the following:**
- 5A. Bioavailability.
- 5B. Preanesthetic medication.
- 5C. Benzodiazepine receptors.
- 5D. Alkylating anticancer agents.
(5×4 = 20 marks)



MANIPAL UNIVERSITY**M. PHARM. PART-I DEGREE EXAMINATION – MAY/JUNE 2012****SUBJECT: DRUG DISCOVERY AND DEVELOPMENT (PHA 602)
(SPECIALIZATION: PHARMACOLOGY)**

Tuesday, May 29, 2012

Time: 10:00 – 13:00 Hrs.

Max. Marks: 100

Answer all questions.

- 1A. A new drug for AIDS has been discovered. Describe the procedures involved in IND and NDA submission for the same.
- 1B. Explain the principles and procedure involved in RIA of Insulin.

(10+10 = 20 marks)

- 2A. In an antidiabetic screening method the FBS (mg/dl) determined in three groups of animals is as follows.

Control group (n=8) 232, 200, 190, 214, 240, 200, 195, 220

Test drug group (n=8) (100mg/kg) 150, 130, 140, 160, 170, 140, 140, 145

Glibencalmide group (0.5mg/kg) (n=8) 90, 100, 90, 85, 100, 90, 100, 80

Analyze the data using one-way ANOVA followed by Scheffe's test to find out if the test drug has got antidiabetic activity and if so is it as efficacious as the standard drug? Summarize the data and present it in a scientific manner.

- 2B. Explain what are special toxicological studies. How are these performed? Explain with the help of examples.

(10+10 = 20 marks)

3. Describe the screening methods for:

3A. Antiepileptic

3B. Antihypertensive

(10+10 = 20 marks)

- 4A. Describe rat and rabbit as experimental subjects. Explain their application in experimental pharmacology.

- 4B. Discuss the fundamentals of Phase I clinical trials.

(10+10 = 20 marks)

5. Write short note on the following:

5A. Wilcoxon Rank Sum test.

5B. Application of Student's t test.

5C. Orphan drugs.

5D. Placebos in drug research.

(5×4 = 20 marks)



MANIPAL UNIVERSITY

M. PHARM. PART-I DEGREE EXAMINATION – MAY/JUNE 2012

SUBJECT: APPLIED AND CLINICAL PHARMACOLOGY (PHA 603)

(SPECIALIZATION: PHARMACOLOGY)

Thursday, May 31, 2012

Time: 10:00 – 13:00 Hrs.

Max. Marks: 100

✍ **Answer all questions. Each question carries TWENTY marks.**

- 1A. Discuss the common biochemical and hematological laboratory data and their implications in therapeutics.
- 1B. Classify and discuss the mechanisms of adverse drug reactions. Discuss the detection and monitoring of adverse drug reactions.

- 2A. Discuss the incidence, pathogenesis and pharmacotherapy of rheumatoid arthritis.
- 2B. Discuss the pathophysiology of different types of epileptic disorders and their specific pharmacotherapy.

- 3A. Discuss hormone replacement therapy and its implications.
- 3B. Explain the factors that lead to anemia and discuss the drug treatment for the important types of anemia.

- 4A. Explain the incidence, pathogenesis, clinical symptoms and pharmacotherapy of CCF.
- 4B. Discuss the pathogenesis and chemotherapy of urinary tract infections.

5. **Write short notes on the following:**
 - 5A. Drug resistant malaria and its treatment.
 - 5B. Drugs and lactation.
 - 5C. Pharmacotherapy of dyslipidemia.
 - 5D. TB



MANIPAL UNIVERSITY**M. PHARM. PART-I DEGREE EXAMINATION – MAY/JUNE 2012****SUBJECT: CELLULAR AND MOLECULAR PHARMACOLOGY (PHA 604)****(SPECIALIZATION: PHARMACOLOGY)**

Saturday, June 02, 2012

Time: 10:00 – 13:00 Hrs.

Max. Marks: 100

✍ **Answer all the questions. All questions carry equal marks.**

✍ **Draw the neat, labeled diagram wherever necessary.**

- 1A. Explain the sequence of events in the action of estrogen and thyroid hormone.
- 1B. Discuss how ribosomes are assembled in the nucleolus with a diagram.
- 2A. Explain the functions and degradation pathway of cyclin B. Describe its role in spindle check point assembly.
- 2B. Discuss clonal selection for development of cancer.
- 3A. Explain the signal transduction mechanism of apoptosis by extrinsic pathway.
- 3B. Describe Nollers experiment to explain the catalytic role of ribosomal RNA.
- 4A. Write short notes on: i) Okazaki fragments ii) TATA box and transcription factors.
- 4B. Discuss different steps involved in initiation stage of transcription
- 5A. Describe the terms “Wobble pairing” and Shine-Dalgarno sequence.
- 5B. List the different cell adhesion molecules and their role in stable / transient cell junctions
- 5C. Haemopoietic stem cell is a multi-potent stem cell. Justify.
- 5D. Describe the process of production of metabolic energy.

