

MANIPAL UNIVERSITY

THIRD YEAR PHARM D. DEGREE EXAMINATION – MAY/JUNE 2011

SUBJECT: PD 3.1: PHARMACOLOGY – II

Monday, May 23, 2011

Time: 10:00 – 13:00 Hrs.

Max. Marks: 70

✍ **Answer all the questions. Draw the neat, labeled diagram wherever necessary.**

✍ **Long Essay:**

1. Describe the common properties of aminoglycoside antibiotics. Explain how the organisms develop resistance to aminoglycoside antibiotics. Write the interaction between frusemide and streptomycin.

(5+4+1 = 10 marks)

2. With the help of a neat diagram, describe the replication cycle by an HIV virion and the sites of action of antiviral drugs.

(7+3 = 10 marks)

3. Discuss the strategy for making retroviral vectors for gene therapy. Mention the applications of gene therapy.

(6+4 = 10 marks)

4. Short Essay:

4A. Describe the mechanism of action of Dapsone. Give its use and adverse effects.

4B. Compare and contrast heparin and warfarin.

4C. Explain the actions of streptokinase. Mention its side effects.

4D. Write a note on the positive and negative regulators of cell cycle.

4E. Write the mechanism of action of pyrantel pamoate. List its therapeutic uses.

4F. Discuss the dose related toxicities of tetracycline.

(5×6 = 30 marks)

5. Short Answers.

5A. Define the roles of peroxisomes and lysosome.

5B. Name any two special toxicity studies conducted.

5C. List the drawbacks of penicillin G.

5D. What is “Red man syndrome”?

5E. Give two salient features of third generation cephalosporins.

(2×5 = 10 marks)



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THIRD YEAR PHARM D. DEGREE EXAMINATION – MAY/JUNE 2011

SUBJECT: PD 3.2: PHARMACEUTICAL ANALYSIS

Wednesday, May 25, 2011

Time: 10:00 – 13:00 Hrs.

Max. Marks: 70

✍ **Answer all questions. Draw neatly labeled diagram wherever necessary.**

✍ **Long Essay:**

- 1A. Explain the formal ICH procedure for approving of the guidelines.
 1B. Explain polarographic maxima and supporting electrolyte in polarography. (5+5 = 10 marks)

- 2A. What are the reasons for deviation from Beer's law? Explain with examples.
 2B. Write the Principle and working of the photomultiplier tube detector in UV-spectrophotometer. (10 marks)

- 3A. Explain the different columns used in GC.
 3B. Write the principle of gel chromatography. (5+5 = 10 marks)

4. **Short Essay:**

- 4A. Explain the construction and working of any two detectors used in HPLC. (5 marks)

- 4B. Discuss the theory of IR spectroscopy. (5 marks)

- 4C. i) List the advantages and disadvantages of ISO 9000.
 ii) Mention the various components of flame photometer. (3+2 = 5 marks)

- 4D. i) Explain the principle of fluorescence.
 ii) Differentiate fluorimeter and spectrofluorimeter. (3+2 = 5 marks)

- 4E. Write the construction and working of any one reference electrode and indicator electrode. (5 marks)

- 4F. i) What information is obtained from the proton NMR spectrum?
 ii) What are the parameters measured in DTA and TGA? (3+2 = 5 marks)

5. **Short Question:**

- 5A. What is atomic absorption spectroscopy? List its advantages.
 5B. Explain Bragg's equation.
 5C. Explain Cotton effect.
 5D. Enlist the various ionization techniques in mass spectroscopy.
 5E. Write the theory of atomic emission spectroscopy. (2×5 = 10 marks)



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THIRD YEAR PHARM D. DEGREE EXAMINATION – MAY/JUNE 2011

SUBJECT: PD 3.3: PHARMACOTHERAPEUTICS – II

Friday, May 27, 2011

Time: 10:00 – 13:00 Hrs.

Max. Marks: 70

✍ **Answer all the questions.**

✍ **Long Essay Questions:**

1. Discuss the etiopathogenesis of pneumonia. Elaborate the treatment of hospital acquired pneumonia.
(5+5 = 10 marks)
2. Explain the etiopathogenesis of candidiasis. Outline the diagnosis and treatment of mucocutaneous candidiasis.
(5+5 = 10 marks)
3. Describe the pathophysiology, clinical presentations, and the treatment for rheumatoid arthritis.
(3+3+4 = 10 marks)

4. Short Essay Questions:

- 4A. Enumerate the drugs used in tubercular meningitis and give the rationale for the use of mannitol in meningitis.
(5 marks)
- 4B. Outline the pathophysiological cascade of sepsis. Briefly discuss the treatment of sepsis.
(2+3 = 5 marks)
- 4C. Briefly discuss the clinical presentation and pharmacological treatment of Systemic Lupus Erythematosus.
(2+3 = 5 marks)
- 4D. Explain cell cycle with suitable diagram.
(5 marks)
- 4E. Explain briefly the mechanisms of initiating and progressive mechanisms involved in the manifestation of Chronic Kidney Disease (CKD). Give the rationale for the use of ACE inhibitors in CKD.
(5 marks)
- 4F. Explain the treatment for gout with suitable flow diagram.
(5 marks)

5. Short Questions:

- 5A. Outline the management of nausea and emesis in chemotherapy.
- 5B. Give the treatment algorithm for pharyngitis.
- 5C. Outline clinical presentation and treatment of syphilis.
- 5D. Compare and contrast rheumatoid arthritis and osteoarthritis.
- 5E. What is Psoriasis? List the factors causing exacerbation of psoriasis.
(2×5 = 10 marks)



MANIPAL UNIVERSITY**THIRD YEAR PHARM D. DEGREE EXAMINATION – MAY/JUNE 2011****SUBJECT: PD 3.4: PHARMACEUTICAL JURISPRUDENCE**

Monday, May 30, 2011

Time: 10:00 – 13:00 Hrs.

Max. Marks: 70

☞ Answer ALL the Questions.**☞ Long Essay Questions:**

- 1A. What are the qualification and duties of Government Analyst?
- 1B. What are the conditions for the import of 'drugs for personal use' and 'new drugs' as per Drugs and Cosmetics Act?
- 2A. What are the conditions of license to manufacture dutiable goods as per Medicinal and Toilet Preparations Act?
- 2B. What are the measures taken by central government to prevent illicit traffic as per NDPS Act?
- 3A. Discuss actions taken by Government against recommendation made by Drugs Enquiry Committee.
- 3B. Discuss in brief the ethics that a pharmacist should observe in relation to his Profession.

(10×3 = 30 marks)

4. Short Essay Questions:

- 4A. What are the conditions for distribution of Schedule C, C₁ drugs through motor vehicle?
- 4B. What are the requirements of production and ancillary area as per Schedule M of Drugs and Cosmetics Act?
- 4C. Write a detailed note of Education Regulations.
- 4D. What are different categories of advertisements which are exempted conditionally as per Drugs and Magic Remedies Act?
- 4E. What are the conditions for breeding and stocking of animals?
- 4F. What are the objectives of Essential Commodities Act? Write a note on functions of NPPA.

(5×6 = 30 marks)

5. Short Answers:

- 5A. Which inventions are not patentable according to Patents Act?
- 5B. How many years maximum a Design can be protected according to Designs Act? Enlist any five things which should not be included in Design.
- 5C. Define 'narcotic drug' and 'psychotropic substance' as mentioned under NDPS Act.
- 5D. Give two examples each for prescription and non-prescription drugs.
- 5E. Define Misbranded drug as per Drugs and Cosmetics Act.

(2×5 = 10 marks)



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THIRD YEAR PHARM D. DEGREE EXAMINATION – MAY/JUNE 2011

SUBJECT: PD 3.5: MEDICINAL CHEMISTRY

Wednesday, June 01, 2011

Time: 10:00 – 13:00 Hrs.

Max. Marks: 70

✍ Long Essay:

1A. Give the synthesis and uses of the following:

- i) Dienestrol ii) Hydrocortisone acetate

1B. Write the SAR of tetracyclines.

(5+5 = 10 marks)

2A. Outline the synthesis of Verapamil.

2B. Give the structures of any two calcium channel blockers.

2C. What are hypoglycemic agents? Give the structure of

- i) Chlorpropamide ii) Metformin

2D. Write the stereochemistry of Chloramphenicol. Which isomer is therapeutically active?

(3+2+2+3 = 10 marks)

3A. Classify antiprotozoal agents with examples.

3B. Give the classification of Progesterone derivatives with examples and mention their therapeutic applications.

3C. Give the SAR of testosterone.

(3+4+3 = 10 marks)

4. Short Essay:

4A. i) How do you reduce the crystalluria effect of sulfonamides?

ii) What is the reason for having an heterocyclic substitution at N¹-position of sulfonamides?

iii) Why only an intermediate acting sulfonamide is chosen to combine with trimethoprim in co-trimoxazole?

(2+2+1 = 5 marks)

4B. Classify Anti-metabolites which are used as anti-cancer drugs giving structures.

(5 marks)

4C. Write the synthesis of the following:

- i) Ethionamide ii) Diloxanide furoate

(5 marks)

4D. Classify anticoagulants. Explain the mechanism of action and synthesis of Dicumarol.

(5 marks)

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THIRD YEAR PHARM D. DEGREE EXAMINATION – MAY/JUNE 2011

SUBJECT: PD 3.6: PHARMACEUTICAL FORMULATIONS

Friday, June 03, 2011

Time: 10:00 – 13:00 Hrs.

Max. Marks: 70

✍ **Answer all the questions.**

✍ **Long Essay Questions:**

1. Write on weight variation requirement, uniformity of content, mechanical strength, disintegration and dissolution of tablets.
2. Explain the various advantages and disadvantages of hard gelatin capsules.
3. Write on different methods of film coating of tablets.

(10×3 = 30 marks)

4. Short Essay Questions:

- 4A. Explain the various steps involved in the manufacture of empty shells of hard gelatin capsules.
- 4B. Discuss on the nature of capsule contents that can be enclosed in the soft gelatin capsules.
- 4C. How sustained release delivery systems are prepared?
- 4D. List the advantages and disadvantages of implants as novel drug delivery systems. Give examples.
- 4E. Write on the diluents used in manufacture of tablets.
- 4F. Discuss on formulation considerations of liquid orals.

(5×6 = 30 marks)

5. Short Answers Questions:

- 5A. List the different types of tablets.
- 5B. What are ocusert systems?
- 5C. What makes cocoa butter as a suitable base for suppositories?
- 5D. What is base adsorption and minim per gram factor mean?
- 5E. What is type A and type B gelatin?

(2×5 = 10 marks)

