

MANIPAL UNIVERSITY

THIRD YEAR PHARM D. DEGREE EXAMINATION – MAY 2014

SUBJECT: PD 3.1: PHARMACOLOGY – II

Tuesday, May 06, 2014

Time: 10:00 – 13:00 Hrs.

Max. Marks: 70

☞ Answer ALL the questions. Draw a neat, labeled diagram wherever necessary.

☞ Long Essays:

1. Explain, with a diagram, the coagulation pathway and the action of coagulants. Mention three conditions for which coagulants are used. Name two drugs that can restore haemostasis.

(5+3+2 = 10 marks)

2. Classify anti-tubercular drugs with examples. Describe the mechanism of action and adverse effects of any two first line anti-TB drugs.

(4+3+3 = 10 marks)

3. Describe the various phases of cell cycle. With a neat diagram, indicate the major sites of action of cytotoxic agents.

(4+6 = 10 marks)

☞ Short Essays:

4A. Mechanisms of actions of loop diuretic and potassium-sparing diuretics.

4B. Antibacterial action of macrolide antibiotics and development of microbial resistance to them.

4C. Ligand-gated ion channels with special emphasis to nicotinic and GABA_A receptors.

4D. Antimalarial action of chloroquine and development of resistance to it.

4E. Discuss the steps involved in recombinant DNA technology.

4F. Mechanisms of griseofulvin and amikacin.

(5 marks×6 = 30 marks)

☞ Give reasons for the following:

5A. Albendazole is preferred over praziquantel for neurocysticercosis.

5B. Carbonic anhydrase inhibitor is contraindicated in liver disease.

5C. What triggers the progression of a cell from G₀ to G₁?

5D. Azithromycin and not erythromycin could be co-administered with terfenadine.

5E. Menadione should not be used in neonates.

(2 marks×5 = 10 marks)



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THIRD YEAR PHARM D. DEGREE EXAMINATION – MAY 2014

SUBJECT: PD 3.2: PHARMACEUTICAL ANALYSIS

Thursday, May 08, 2014

Time: 10:00 – 13:00 Hrs.

Max. Marks: 70

☞ Answer ALL questions. Draw neatly labeled diagram wherever necessary.

☞ Long Essays:

- 1A. Explain the principle of HPLC. Enlist the detectors used in HPLC.
 1B. Explain the factors affecting the R_f values in paper chromatography. (5+5 = 10 marks)
- 2A. Discuss the electronic transitions that occur in UV spectroscopy.
 2B. Enlist the various UV/visible spectrophotometric methods available for quantitative estimation of drug components. Explain any one method in detail. (5+5 = 10 marks)
- 3A. Explain with suitable example “Dead-stop” end point technique.
 3B. Explain with graph the conductometric titration for the mixture of strong acid and weak acid vs strong base. (5+5 = 10 marks)

☞ Short Essays:

- 4A. What are the molecular factors affecting intensity of fluorescence? (5 marks)
- 4B. Define ISO 9000 with its benefit. Mentioned the Quality Management Principle of ISO 9000. (5 marks)
- 4C. i) Define regulated countries. Mention regulatory authorities of any four countries.
 ii) What are the advantages of atomic absorption spectroscopy? (3+2 = 5 marks)
- 4D. i) Write the theory of NMR.
 ii) What is DSC? Mention its types. (3+2 = 5 marks)
- 4E. Describe the working principle of thermal detectors employed in IR spectrometer. (5 marks)
- 4F. i) Draw a neat labeled diagram of gas chromatography.
 ii) List the application of the gel chromatography. (3+2 = 5 marks)

Short Answers:

- 5A. What are the limitations of flame photometry?
- 5B. Name sources for atomic emission spectrometer.
- 5C. Write the applications of X-ray diffraction.
- 5D. Mention the various mass analyzers used in Mass spectroscopy.
- 5E. What is polarimeter? Write the labeled diagram of the same.

(2 marks×5 = 10 marks)



THIRD YEAR PHARM D. DEGREE EXAMINATION – MAY 2014

SUBJECT: PD 3.3: PHARMACOTHERAPEUTICS – II

Saturday, May 10, 2014

Time: 10:00 – 13:00 Hrs.

Max. Marks: 70

☞ Answer ALL the questions.

☞ Long Essays:

1. Explain the principles of antiretroviral therapy and explain virological and immunological failure in HIV therapy.
(5+5 = 10 marks)
2. Describe the etiopathogenesis of Urinary Tract Infections. With the help of a flow chart, explain the management of UTI in females.
(5+5 = 10 marks)
3. What are the goals of Acute Renal Failure therapy (ARF)? Explain the prevention and treatment of ARF.
(2+8 = 10 marks)

☞ Short Essays:

- 4A. Write a note on clinical manifestation and management of cryptococcal meningitis.
(3+2 = 5 marks)
- 4B. What is the importance of DOTS therapy? Discuss the first line treatment regimen for tuberculosis.
(2+3 = 5 marks)
- 4C. Discuss the management of osteoarthritis.
(5 marks)
- 4D. Explain different type of chemotherapeutic agents acting on the different stages of cell cycle.
(5 marks)
- 4E. Give the principle of haemofiltration and haemodialysis. Briefly explain their utility as Renal Replacement Therapy.
(2+3 = 5 marks)
- 4F. Discuss the pharmacotherapy of gout.
(5 marks)

☞ Short Answers:

- 5A. Outline the treatment for hospital acquired pneumonia.
- 5B. List the treatment options available for the management of psoriasis.
- 5C. Outline the management of chemotherapy-induced nausea and emesis.
- 5D. Give the rationale for the use of chloroquine and azathioprine in the treatment of Systemic Lupus Erythematosus.
- 5E. Enumerate the drugs used in MRSA induced endocarditis.
(2 marks×5 = 10 marks)



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THIRD YEAR PHARM D. DEGREE EXAMINATION – MAY 2014

SUBJECT: PD 3.4: PHARMACEUTICAL JURISPRUDENCE

Tuesday, May 13, 2014

Time: 10:00 – 13:00 Hrs.

Max. Marks: 70

✍ Answer ALL the questions.

✍ Long Essays:

- 1A. As per Medicinal and Toilet Preparations Act what are the conditions of license to manufacture dutiable goods?
- 1B. Under the NDPS Act what is the objective of 'national fund' and explain how it functions?
- 2A. What are the recommendations made by Drugs Enquiry Committee?
- 2B. Explain in brief the ethics that a pharmacist should observe in relation to Medical Profession. Give a brief account on Ethics.
- 3A. What are the general conditions for the import of drugs as per Drugs and Cosmetics Act?
- 3B. What are the conditions for wholesale sale of drugs specified in Sch. C, C1 but not included in Sch. X?

(10 marks×3 = 30 marks)

✍ Short Essays:

- 4A. What are the conditions for performance of experiments on animals as per Prevention of cruelty to animals Act?
- 4B. Write about four phases of Human clinical trials as per Sch. Y of Drugs and Cosmetics Act.
- 4C. Briefly explain the procedure for fixing of price for scheduled formulations.
- 4D. What are the provisions for entry, search and seizure as per Drugs and Magic Remedies Act?
- 4E. Draw a specimen label for a Sch. X drug and add a note on pack sizes for Sch. X drugs.
- 4F. What is the process for registration of name in register as per Pharmacy Act?

(5 marks×6 = 30 marks)

✍ Short Answers:

- 5A. Compare prescription and non-prescription drugs.
- 5B. Give a brief account on Registration of Designs according to Designs Act.
- 5C. Define 'Controlled Substance' as per NDPS Act.
- 5D. Which inventions are not patentable according to Patents Act?
- 5E. Define Loan license and Repacking license as per Drugs and Cosmetics Act.

(2 marks×5 = 10 marks)



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THIRD YEAR PHARM D. DEGREE EXAMINATION – MAY 2014

SUBJECT: PD 3.5: MEDICINAL CHEMISTRY

Thursday, May 15, 2014

Time: 10:00 – 13:00 Hrs.

Max. Marks: 70

✍ **Answer ALL the questions.**✍ **Long Essays:**

- 1A. Explain the basic phases of computer aided drug design with applications.
 1B. What are urinary tract anti-infectives? Classify them with examples.
 1C. Give the structure and use of Methimazole and p-amino hippurate sodium.
 (5+3+2 = 10 marks)

- 2A. Classify Anticancer agents by giving one structure under each class.
 2B. Outline the synthesis of Chloramphenicol. Explain the stereochemistry for chloramphenicol and penicillin.
 (5+5 = 10 marks)

- 3A. Define Diuretics and mention their uses. Classify them with examples. Write the mechanism of action and synthesis of Furosemide.
 3B. What are Anticoagulants? Give the mechanism of action and synthesis of Warfarin.
 (6+4 = 10 marks)

✍ **Short Essays:**

- 4A. Classify anthelmintics with one example and structure. Write the synthesis and IUPAC name of Niclosamide.
 (5 marks)
- 4B. Give the preparation and uses of Griseofulvin. Write a note on chlorophors and iodophors.
 (5 marks)
- 4C. Write the SAR for the following drugs: Sulpha drugs and Amino quinolines as antimalarial drugs.
 (5 marks)
- 4D. Write the synthesis and uses of the following:
 i) Pyrazinamide ii) Chlorambucil iii) Fluro uracil
 (5 marks)
- 4E. Explain the SAR of Beta blockers. Write the synthesis, chemical name and uses of Propranolol.
 (2+3 = 5 marks)
- 4F. Classify Anti-anginal agents with examples. Outline the method of preparation of Verapamil.
 (2+3 = 5 marks)

✍ **Short Answers:**

- 5A. What are pediculocides? Give one example with structure.
 5B. What is co-trimoxazole? Write the advantages of it and mention its uses.
 5C. Write the chemistry of Macrolide antibiotics.
 5D. Classify Steroidal hormones with examples giving their uses.
 5E. Write the structures of Methyl Testosterone, Dienestrol, Lovastatin and Lidocaine.
 (2 marks × 5 = 10 marks)



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THIRD YEAR PHARM D. DEGREE EXAMINATION – MAY 2014

SUBJECT: PD 3.6: PHARMACEUTICAL FORMULATIONS

Saturday, May 17, 2014

Time: 10:00 – 13:00 Hrs.

Max. Marks: 70

✍ Answer ALL the questions.

✍ Long Essays:

1. How soft gelatin capsules dosage forms are manufactured? Explain the merits and demerits of soft gelatin capsules.
2. What factors to be considered for formulations of aqueous liquid orals? Explain. Write examples wherever necessary.
3. With examples explain what is the need of using diluent, binder, disintegrant, lubricant and glidant in the tablet manufacturing?

(10 marks×3 = 30 marks)

✍ Short Essays:

- 4A. What is sugar coating of tablets? Why it is needed?
- 4B. How sustained release delivery systems are prepared?
- 4C. How pyrogens can be eliminated in parenteral preparations? Explain. What are its sources?
- 4D. Write the advantages and disadvantages of film coating of tablets.
- 4E. As per Indian pharmacopoeia how uniformity of weight and uniformity of content is carried out for tablets?
- 4F. What is capping, lamination, picking, sticking and mottling in the tablets manufacturing.

(5 marks×6 = 30 marks)

✍ Short Answers:

- 5A. Write the importance of Isotonicity in parenteral solution.
- 5B. What is jelly strength? Where it is used?
- 5C. What are liposomes and niosomes?
- 5D. How buccal drug delivery can be useful compared to other oral drug delivery?
- 5E. List the types of ointment bases.

(2 marks×5 = 10 marks)

