

**MANIKGAD – III : SUMMER - 2016**  
**SUBJECT : PHARMACOLOGY - II**

Day : Monday  
Date : 04.04.2016

Time : 2.00 P.M. To 5.00 P.M.  
Max. Marks : 70

**N.B.**

- 1) **Q.1 and Q. 5 are COMPULSORY.** Out of the remaining attempt any **TWO** questions from each Section.
- 2) Figures to the right indicate **FULL** marks.
- 3) Answers to both the sections should be written in **SEPARATE** answer books.

**SECTION – I**

- Q.1** a) Answer any **FOUR** of the following: (08)
- i) Classify antibiotics based on their mechanism of action.
  - ii) What is paracrine and autocrine signaling?
  - iii) Give the mechanism of action of  $\beta$  lactam antibiotics.
  - iv) Explain co-trimoxazole.
  - v) Mention the toxic effects of aminoglycoside antibiotics.
- b) Write the mechanism of protein synthesis. (03)
- Q.2** Classify antineoplastic agents. Discuss the mechanism of action and adverse effects of folate antagonists. (12)
- Q.3** a) Give the mechanism of action, pharmacokinetic properties and clinical uses of spirinolactone. (07)
- b) Define and classify immunosuppressants. Discuss the pharmacological profile of cyclosporine. (05)
- Q.4** Write short notes on **ANY THREE** of the following: (12)
- a) Treatment for UTI
  - b) Antifungal agents
  - c) Gene mutation
  - d) Anticoagulants
  - e) Biosensors

**SECTION – II**

- Q.5** a) Answer any **FOUR** of the following: (08)
- i) Write mechanism of action of sulphonamides.
  - ii) Give mechanism of action and clinical use of chloramphenicol.
  - iii) Write a short note on tRNA
  - iv) Write a short note on chromosomes.
  - v) Give reasons for the development of resistance to antihelminthic drugs.
- b) What is acute and chronic toxicity? (03)
- Q.6** Give pathogenesis of cancer, classify anticancer drugs. Write mechanism of anticancer drugs, and explain the reasons for the development of resistance to anticancer drugs. (12)
- Q.7** a) What are tetracyclines ? Classify them; write mechanism of action and adverse effects of tetracyclines. (07)
- b) Write a note on antiviral drugs.
- Q.8** Write **ANY THREE** of the following: (12)
- a) Write the steps involved in viral replication
  - b) Describe in detail the loop diuretics
  - c) Describe in detail various steps of mitotic cycle.
  - d) Write chemotherapy for amoebiasis.
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**MANIKGAD – III: SUMMER - 2016**  
**SUBJECT: PHARMACEUTICAL ANALYSIS**

Day: Wednesday  
Date: 06.04.2016

Time 2.00 P.M. To 5.00 P.M.  
Max. Marks: 70

**N.B.;**

- 1) **Q. No. 1 and Q. No. 5 are COMPULSORY.** Out of the remaining solve Any **TWO** questions from Section – I and Any **TWO** questions from Section – II.
- 2) Answers to the two sections should be written in **SEPARATE** answer books.
- 3) Figures to the **RIGHT** indicate full marks.

**SECTION – I**

- Q.1 A)** Attempt **ANY FOUR** of the following: (08)
- a) State types of adsorbents used in TLC.
  - b) Define specific conductance and molar conductance.
  - c) Compare between Dropping Mercury Electrode and Rotating Platinum Electrode.
  - d) Classify electrodes used in potentiometry.
  - e) State types of gels used in gel chromatography.
- B)** Write methods to develop a chromatogram. (03)
- Q.2 a)** State theories involved in chromatography. (04)
- b)** Discuss in brief Gas Chromatography instrumentation with an exhaustive note on columns used in GC. (08)
- Q.3 a)** Discuss in brief degassing techniques and types of pumps in HPLC. (07)
- b)** Explain polarographic apparatus in detail. (05)
- Q.4** Write short notes on **ANY THREE** of the following: (12)
- a) Conductometric Applications.
  - b) Amperometric titrations.
  - c) ISO Elements.
  - d) Applications of HPTLC.

**P.T.O.**

## SECTION - II

- Q.5 A)** Attempt **ANY FOUR** of the following: (08)
- i) Write types of ions produced in mass spectrophotometer.
  - ii) Explain Bragg's law.
  - iii) Write types of molecular vibrations in IR spectroscopy.
  - iv) State components of fluorimeter.
  - v) Write events occurring in flame photometer.
- B)** Write factors influencing chemical shifts in NMR. (03)
- Q.6 a)** Discuss different types of interference in AAS. (04)
- b)** State and derive Beer- Lambert's Law. Explain deviations leading from it. (08)
- Q.7 a)** Classify thermal methods of analysis. Describe instrumentation and applications of DSC. (07)
- b)** Discuss applications of IR spectroscopy with examples. (05)
- Q.8** Write short notes on **ANY THREE** of the following: (12)
- a) ESR spectrophotometer
  - b) Radiation sources in AAS
  - c) Shielding and Deshielding in NMR
  - d) Applications of XRD

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# Third Year- Pharm D. - 2016.

MANIKGAD - III : SUMMER - 2016  
SUBJECT : PHARMACOTHERAPEUTICS - II

Day : Saturday  
Date : 09-04-2016

Time : 2.00 P.M. To 5.00 P.M.  
Max. Marks : 70

N.B:

- 1) **Q.No.1 and Q.No.5 COMPULSORY.** Out of remaining questions attempt **ANY TWO** questions from each section.
- 2) Answers to both the sections should be written in **SEPARATE** answer books.
- 3) Figures to the right indicate **FULL** marks.

## SECTION - I

- Q.1** A) Answer **ANY FOUR** of the following: [08]  
i) What are the indications for antibiotics?  
ii) What is Chemotherapy?  
iii) Differentiate between Sinusitis and rhinitis.  
iv) What are different types of urinary tract infections?  
v) What is septicemia?  
vi) Name the first line antitubercular drugs.  
vii) What are different types of dermatitis?
- B) What is the role of corticosteroids in different skin diseases? [03]
- Q.2** Discuss etiology, diagnosis and specific antibiotics therapies for infectious endocarditis. [12]
- Q.3** a) Discuss pharmacotherapy of Pulmonary tuberculosis. [07]  
b) Discuss pathophysiology and choice of antibiotic regimeNs for bacterial gastroenteritis. [05]
- Q.4** Write short notes on **ANY THREE** of the following: [12]  
a) Complications of malaria  
b) Antibiotic Regimen for sinusitis  
c) Antiretroviral drugs  
d) Malaria cycle

## SECTION - II

- Q.5** A) Answer **ANY FOUR** of the following: [08]  
i) What is the significance of Creatinine clearance?  
ii) What is the etiology for RA?  
iii) What is hemodialysis?  
iv) What is Cancer?  
v) Define SLE.  
vi) What is chemotherapy?  
vii) What is spondylitis?
- B) Differentiate RA and OA. [03]
- Q.6** Discuss etiology, Malaria cycle and Pharmacotherapy for malaria. [12]
- Q.7** a) Define RA and write in detail about pharmacotherapy of RA. [07]  
b) Discuss management of chemotherapy induced nausea and vomiting. [05]
- Q.8** Write short notes on **ANY THREE** of the following: [12]  
a) Local treatment of Cancer  
b) Pharmacotherapy of Gout  
c) Management of Spondylitis  
d) Management of CRF

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**MANIKGAD - III : SUMMER - 2016**  
**SUBJECT : PHARMACEUTICAL JURISPRUDENCE**

Day : **Tuesday**  
Date : **12-04-2016**

Time : **2.00 P.M. To 5.00 P.M.**  
Max. Marks : **70**

**N. B. :**

- 1) **Q. No. 1 and Q. No. 5 are COMPULSORY.** Out of remaining questions attempt **ANY TWO** questions from Section - I and II.
- 2) Figures to the right indicate **FULL** marks.
- 3) Both the sections should be written in the **SEPARATE** answer books.

**SECTION - I**

- Q. 1 A)** Answer any **FOUR** of the following: **(08)**
- i) What are the objectives of Narcotic Drugs and Psychotropic Substances Act?
  - ii) Who is a Registered Pharmacist?
  - iii) How will you define an "Adulterated Drug"?
  - iv) What is Bonded Manufactory?
  - v) What are the conditions for storage of Schedule X drugs?
  - vi) What are the building requirements according to Schedule M?
- B)** Classify medicinal and toilet preparations containing alcohol. **(03)**
- Q. 2 a)** Discuss the constitution of Pharmacy Council of India. **(06)**
- b)** What is the qualification required for a Drug Inspector? What are his powers? **(06)**
- Q. 3** Discuss the provisions for offences and penalties under Medicinal and Toilet Preparations Act 1955. **(12)**
- Q. 4** Write short notes on **ANY THREE** of the following: **(12)**
- a) Standards of Ophthalmic products
  - b) Prevention of abuse of Narcotic Drugs
  - c) Duties of Government Analyst
  - d) Drug import provisions in India

**P. T. O.**

## SECTION - II

- Q. 5** A) Answer any **FOUR** of the following: (08)
- i) Define Magic Remedy.
  - ii) What is the object of Prevention of Cruelty to Animals Act 1960?
  - iii) What do you mean by Bulk Drug?
  - iv) Define an Invention.
  - v) What are the penalties under Patents Act 1970?
  - vi) What is Patent of addition?
- B) Differentiate between Generic and Branded Formulations. (03)
- Q. 6** a) Discuss the process of grant of a Patent according to Patents Act 1970. (06)
- b) Discuss writing of prescription in detail. (06)
- Q. 7** a) What are the classes of exempted advertisements under Drugs and Magic Remedies Act 1954? (06)
- b) How the non obviousness (inventive step) of an invention is determined? (06)
- Q. 8** Write short notes on **ANY THREE** of the following: (12)
- a) Animal Welfare Board of India
  - b) Provisional specifications w.r.t. Patents Act
  - c) Penalties under Essential Commodities Act
  - d) OTC products

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**MANIKGAD – III : SUMMER - 2016**  
**SUBJECT : MEDICINAL CHEMISTRY**

Day : Saturday  
Date : 16-04-2016

Time : 2.00 P.M. To 5.00 P.M.  
Max. Marks : 70

**N.B.**

- 1) **Q.1 and Q. 5 are COMPULSORY.** Out of the remaining attempt any **TWO** questions from each Section.
- 2) Figures to the right indicate **FULL** marks.
- 3) Answers to both the sections should be written in **SEPARATE** answer books.

**SECTION – I**

- Q.1** a) Answer any **FOUR** of the following: (08)
- i) Classify anti-viral agents.
  - ii) Write two structures of antiamoebic agents.
  - iii) Classify topical antiinfective agents.
  - iv) Define QSAR. Write methods of QSAR.
  - v) Write structures of pyrazinamide and ethambutol.
- b) Classify antifungal agents. (03)
- Q.2** a) Classify antimalarials. Write note on quinolines as a antimalarial agents. (07)
- b) SAR of sulphonamides. (05)
- Q.3** Define and classify antibiotics. Write a detail note on tetracyclines. (12)
- Q.4** Write synthesis of any **THREE** of the following: (12)
- a) Sulphamethoxazole
  - b) 17  $\beta$ -oestradiol
  - c) Furosemide
  - d) Isoniazide

**SECTION – II**

- Q.5** a) Answer any **FOUR** of the following: (08)
- i) Draw structures of any two anticoagulants.
  - ii) Classify antiarrhythmic agents.
  - iii) MOA of HMG-CoA reductase inhibitors.
  - iv) Drugs used in angina pectoris.
  - v) Draw structures of any two antihypertensive agents.
- b) Write note on antihyperlipidemic agents. (03)
- Q.6** a) Classify diuretics and write a note on thiazide diuretics. (07)
- b) Write a note on Glucocorticoids. (05)
- Q.7** Write a detail note on antineoplastic agents. (12)
- Q.8** Write note on any **THREE** of the following: (12)
- a) Antihypertensive agents
  - b) Synthetic hypoglycemic agents
  - c) Thyroid hormones and antithyroid drugs
  - d) Diagnostic agents

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## SUBJECT: PHARMACEUTICAL FORMULATIONS

Day: Wednesday  
 Date: 20-04-2016

Time: 2:00 P.M. To 5:00 P.M.  
 Max Marks: 70

## N.B:

- 1) Q.1 and Q.5 are **COMPULSORY**. Out of remaining answer any **TWO** Questions from each section.
- 2) Figures to the right indicate **FULL** marks.
- 3) Answer to each section should be written in **SEPARATE** answer book.

## SECTION-I

- Q.1** A) Answer any **FOUR** questions (08)
- a) Discuss term "Solubility" "Solubilization" and "Dissolution".
  - b) Write co-solvency technique used in monophasic liquid formulations.
  - c) Discuss weight variation test for capsules.
  - d) Explain physical stability of emulsions.
  - e) Write concept of buccal tablet and their applications.
  - f) Classify preservatives according its use into dosage forms.
- B) Discuss about colouring agents used in syrups. (03)
- Q.2** a) Write about material of fabrication for hard capsules. (06)
- b) Discuss a method to manufacture soft gelatin capsules. (06)
- Q.3** a) Discuss methods to manufacture suspensions. (06)
- b) Write various physical and chemical stabilizers used in suspensions. (06)
- Q.4** Write note on **ANY THREE** (12)
- a) Antioxidants
  - b) Emulsifying agents
  - c) Pre-formulation
  - d) Sustained release tablets

## SECTION-II

- Q.5** A) Answer any **FOUR** questions (08)
- a) Enumerate advantages of dry granulation.
  - b) Enlist advantages of sublingual tablets.
  - c) Explain a method to sterilize thermolabile pharmaceuticals.
  - d) Write benefits of enteric coated tablets.
  - e) Define term: Isotonic, Sterile, Apyrogenic and Hypertonic.
  - f) Discuss properties of water for injection and sterile water for injection.
- B) Describe techniques to determine flow property of granules. (03)
- Q.6** a) Explain significance of tablet coating and enlist steps involved in sugar coating. (06)
- b) Write significance of glidants and lubricants in solid dosage forms. (06)
- Q.7** a) Explain steps involved in film coating of tablets. (06)
- b) Write detailed note on capsules formulation to be filled in hard capsules. (06)
- Q.8** Write note on **ANY THREE** (12)
- a) Method for preparation of suppositories
  - b) Factors affecting absorption of drug through skin
  - c) Sterility test
  - d) Jellies

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Day : Thursday  
Date : 07-07-2016

Time: 10:00 AM TO 1:00 P.M.  
Max Marks: 70

N.B.:

- 1) Q.No.1 and Q.No.5 are **COMPULSORY**. Out of remaining questions attempt **ANY TWO** questions from each section.
- 2) Answers to both the sections should be written in the **SEPARATE** answer books.
- 3) Figures to the **RIGHT** indicate full marks.

## SECTION-I

- Q.1** A) Attempt **ANY FOUR** of the following: (08)
- a) Write the advantages of tablet as dosage form.
  - b) Write the classification of dosage form as per route of administration.
  - c) Write the significance of suppository as dosage form.
  - d) Differentiate between flocculated and deflocculated suspension.
  - e) Explain the creaming and cracking of emulsion.
- B) Write the criteria for selection of coloring agent in dosage forms. (03)
- Q.2** Discuss in detail large scale manufacturing of emulsion and its evaluation. (12)
- Q.3** a) Write the factors affecting on percutaneous absorption. (06)
- b) Write the merits and demerits of sustained release formulations and write rational behind development of it. (06)
- Q.4** Answer **ANY THREE** of following: (12)
- a) Packaging of oral liquids.
  - b) Implantable drug delivery system.
  - c) Suspending agents.
  - d) Solubility enhancement techniques.

## SECTION-II

- Q.5** A) Attempt **ANY FOUR** of the following: (08)
- a) Define Large Volume Parenterals and Small Volume Parenterals.
  - b) Enlist coating agent and write the significance of enteric coating.
  - c) Write the significance of dissolution testing and how it is correlated with therapeutic effect.
  - d) Write the role of tonicity modifiers and mention two examples of tonicity modifiers.
  - e) How capsules are different dosage forms in comparison to tablets.
- B) Write the significance of disintegration time of different tablets. (03)
- Q.6** Discuss the evaluation parameters of coated tablets. (12)
- Q.7** a) Discuss the need of formulating drug in the form of soft and hard gelatin capsules with their merits and demerits. (06)
- b) Discuss the plastic containers used for parenterals. (06)
- Q.8** Answer **ANY THREE** of following: (12)
- a) Different "Class" of area as parenteral facility.
  - b) Sugar coating of tablets.
  - c) Filling of soft gelatin capsules.
  - d) Approaches to minimize "Mottling" in tablets.

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