

MANIKGAD-III: SUMMER - 2016

SUBJECT: PHARMACEUTICAL FORMULATIONS

Day: Wednesday

Time: 2:00 P.M. To 5:00 P.M.

Date: 20-04-2016

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 to 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

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 β -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

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 COPD

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: 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 flurimeter.
 - 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 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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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 β 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 long division

SUPPLEMENTARY

MANIKGAD-III SUMMER-2016
SUBJECT: PHARMAECUTICAL FORMULATIONS

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.