Total No. of Questions : 6]

SEAT No. : [ ]

[Total No. of Pages : 2

P1410

[5049] - 41

F.Y. B.Pharm.

PHARMACEUTICS - III

(2008 Pattern)

Time : 3 Hours] ***[Max. Marks : 80***

Instructions to the candidates :

1) ***Answer to the two sections should be written in separate answer book.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***All questions are compulsory.***

SECTION - I

Q1) Describe formulation of Small volume parenterals. **[10]**

OR

Discuss suitable methods for the evaluation of glass and plastic containers. **[10]**

Q2) Attempt any 5 (03 marks each) **[15]**

a) Give an account of process validation.

b) Write note on membrane filters.

c) What are pyrogens? Explain sham test.

d) Give uses of LVPs and explain types of LVPs for intravenous use.

e) Give an account of different vehicles in parenteral.

f) Explain the HEPA filter and its testing

g) Describe factors affecting selection of packaging material for LVP

Q3) Attempt any three (05 marks each) **[15]**

a) Write a note on buffering agents for injections.

b) Write a note on preformulation of sterile products.

c) Explain manufacturing of parenterals suspensions.

d) Write a note on validation of steam sterilizers.

e) Explain sterility test IP.

P.T.O.

SECTION - II

Q4) Explain the concept of oral controlled release dosage forms with its types. **[10]**

OR

Write the pharmaceutical applications of microencapsulation. Describe the air suspention technique of microencapsulation. **[10]**

Q5) Attempt any 5 (03 marks each) **[15]**

a) Write a note on prebiotics and probiotics.

b) Explain evaluation procedures for microcapsules.

c) Give an account of various mucosal drug delivery systems.

d) Give prerequisites of drug candidates for formulating sustained drug delivery.

e) Describe solvent evaporation method for microencapsulation.

f) Describe factors influencing drug deposition from aerosols.

g) Give an account of intrauterine devices

Q6) Attempt any 3 (05 marks each) **[15]**

a) Give an account of aerosol components and factors affecting their selection.

b) Give account of intranasal topical applications

c) Write a note on transdermal drug delivery systems

d) Describe factors affecting selection of polymer for modified drug release.

e) Explain chemical decomposition in solid state with suitable examples.

Total No. of Questions : 6]

SEAT No. :

[Total No. of Pages : 2

P1411

[5049] - 42

Final Year B.Pharm.

BIOPHARMACEUTICS AND PHARMACOKINETICS

(2008 Pattern)

Time : 3 Hours] *[Max. Marks : 80*

Instructions to the candidates :

1) ***Answer to the two sections should be written in separate answer book.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Figures to the right indicates full marks.***

SECTION - I

Q1) Answer any 1 out of 2 : **[10]**

a) Discuss various mechanisms of drug transport.

b) Discuss various Physicochemical factors affecting drug absorption.

Q2) Answer any 5 out of 7 : **[15]**

a) What are the various sites of drug metabolism in the body?

b) List the factors influencing renal excretion of drugs.

c) Explain the objectives of bioavailability studies.

d) Justify how blood brain barrier affects drug distribution process

e) Describe briefly influence of excipients on drug bioavailability.

f) List various applications of prodrug design.

g) Classify the body components to which drugs normally bind

Q3) Answer any 3 out of 5 : **[15]**

Write short notes on :

a) Entero hepatic circulation of drug

b) Plasma protein binding

c) Statistical methods used in BA/BE studies

d) pH partition hypothesis

e) In vitro in vivo corelation

P.T.O.

SECTION - II

Q4) Answer any 1 out of 2 : **[10]**

a) Explain one compartment open model for i.v bolus of drug.

b) Explain the concept of BCS and its significance with respect to IVIVC

Q5) Answer any 5 out of 7 : **[15]**

a) Enlist various applications of pharmacokinetic principles.

b) Define V_{max}, k_m and T_{max}

c) Differentiate between mamillary and caternary model

d) Give in brief various drug dissolution mechanisms

e) Give tests to detect non linearity in pharmacokinetics of drug.

f) Justify why digoxin requires therapeutic drug monitoring

g) State briefly various methods of IVIVC

Q6) Answer any 3 out of 5 : **[15]**

Write short notes on :

a) Method of residuals

b) Physiological model

c) Two compartmental models

d) Wagner Nelson method

e) Importance of individualization of dose

Total No. of Questions : 6]

SEAT No. : [ ]

[Total No. of Pages : 2

P1412

[5049] - 43

F.Y. B.Pharm.

MEDICINAL CHEMISTRY - II

(2008 Pattern)

Time : 3 Hours] ***[Max. Marks : 80***

Instructions to the candidates :

1) ***All questions are compulsory***
2) ***Answer to the two sections should be written in separate answer book.***
3) ***Neat diagrams must be drawn wherever necessary.***
4) ***Figures to the right indicates full marks.***

SECTION-I

Q1) Classify antimalarial agents with examples. Discuss Biguanides, polycyclic compounds, pyrimethamine and newer antimalarial agents. **[10]**

OR

Classify antitubercular and antileprotic agents with examples. Give the MOA of any four first line antitubercular agents. Give scheme of synthesis of Ethambutol.

Q2) Solve any FIVE : **[15]**

a) Give the MOA of Cyclophosphamide and Procarbazine as alkylating agents.

b) Give SAR Quinolone antibacterials. Draw the scheme of synthesis of Ciprofloxacin.

c) How pKa is important in design of sulfonamides? Discuss any three sulfonamides containing pyrimidine ring.

d) Draw structure and discuss SAR, MOA of Benzofuran ring containing antifungal agent.

e) Discuss "Imidazole derivatives" as antiamoebic agents.

f) Draw the scheme of synthesis of Zidovudine.

g) Discuss Suramine and Arsenic compounds as trypanosomicidal agents.

P.T.O.

Q3) Write note on (any THREE) : **[15]**

a) Quantitative Structure Activity Relationship

b) Phase-I metabolism reactions.

c) Anthelmintic agents.

d) Antiretroviral agents.

e) Reverse Transcriptase inhibitors (NRTIs & NNRTIs).

SECTION-II

Q4) Classify antihistaminics in detail and write a note on Pheniramines. **[10]**

OR

Discuss instability of natural penicillin in acidic and alkaline medium. Write about structural modifications made in natural penicillin to improve its acid stability with suitable examples.

Q5) Solve Any Five : **[15]**

a) Give the scheme of synthesis of Chloramphenicol.

b) Comment on antithyroidal agents

c) What is enzyme beta-lactamase? Write about beta-lactamase inhibitors.

d) Give the scheme of synthesis of Prednisolone.

e) Explain chemistry of Steroid nucleus.

f) Write SAR of salicylates as NSAIDs.

g) Give the scheme of synthesis of Ranitidine.

Q6) Solve Any Three : **[15]**

a) Write short note on Proton Pump Inhibitors.

b) Development of H_2 Blockers.

c) Write short note on Aminoglycoside antibiotics.

d) SAR and mode of action of antibiotic having nitroaromatic ring system with propandiol side chain.

e) What are opioid analgesics? Explain the SAR and MOA of Morphine.

Total No. of Questions : 8]

SEAT No. :

[Total No. of Pages : 2

P1413

[5049] - 44

F.Y. B.Pharm.

PHARMACY

Pharmaceutical Analysis - III

(2008 Pattern)

Time : 3 Hours] *[Max. Marks : 80*

Instructions to the candidates :

1) ***Write answer to section I and Section II in separate answer book.***
2) ***Q. No. 1 and Q. No. 5 are compulsory.***
3) ***Write Two questions from Section I and Two questions from Section II from the remaining.***

SECTION - I

Q1) Answer any Five. **[10]**

a) n-Butane shows splitting of signals in its NMR spectrum.

b) An unknown organic compound gave molecular ion at m/e = 136. Two possible structures corresponding to m/e = 136 are $C_{10}H_{16}$ (I) and $C_{10}H_2N$ (II). Which of the structure can be eliminated on basis of Nitrogen rule?

c) What is the principle of fluorimetric detection in HPLC?

d) Toluene does not show splitting of NMR signals.

e) Carbon disulphide and Carbon tetra chloride can not be used as solvents for amino alcohols.

f) Why ^{12}C, ^{16}O, ^{18}O, ^{32}S do not show NMR spectra?

Q2) a) Explain the Principle and Instrumentation Mass spectrometer. **[10]**

b) Identify the major mass fragments for the following. **[5]**

i) Toluene

ii) Phenylacetic acid

iii) Triethyl amine

P.T.O.

Q3) a) What is Validation? Why it is required? **[10]**

b) Explain the Validation of Analytical method as per ICH guidelines. **[5]**

Q4) Write note on : **[15]**

a) Fash chromatography

b) Spin - Spin coupling

c) HETP

d) Eluation techniques in HPLC

SECTION - II

Q5) Explain the X-ray diffraction techniques and add a note on Pharmaceutical applications. **[10]**

Q6) a) Explain the theory of Nuclear Magnetic Resonance spectroscopy. **[10]**

b) How will you differentiate the following by NMR **[5]**

i) Ethyl acetate and Methyl acetate

ii) Benzaldehyde and Benzophenone

iii) Phenol and Aniline

iv) Cinnamic acid and 3-Phenyl propionic acid

Q7) a) What is ESR? Explain principle and applications. **[10]**

b) Capillary columns in Gas chromatography. **[5]**

Q8) Write note on Any Three **[15]**

a) Supercritical fluid extraction

b) Merits and demerits of HPLC

c) Van Deemter equation

d) Capillary electrophoresis

Total No. of Questions : 6]

SEAT No. : [ ]

[Total No. of Pages : 2

P1414

[5049] - 45

F.Y. B.Pharm.

PHARMACOLOGY - III

(2008 Pattern)

Time : 3 Hours] ***[Max. Marks : 80***

Instructions to the candidates :

1) ***Answers to the two sections should be written in separate books.***
2) ***Figures to the right indicate full marks.***
3) ***All questions are compulsory.***

SECTION - I

Q1) Classify the drugs used for HIV infection. Explain in detail the mode of action, pharmacological actions, therapeutic uses and adverse effects of reverse transcriptase inhibitors. **[10]**

OR

Define angina pectoris. Discuss the mode of action, pharmacological actions, therapeutic uses and adverse effects of nitrates.

Q2) Solve any five: **[15]**

a) Give a brief account on potassium sparing diuretics.

b) Classify poisons with examples.

c) Describe the class II antiarrhythmic agents.

d) Classify anti - tubercular drugs. Explain the mechanism and adverse effects of isoniazide.

e) Explain in detail mode of action of digitals.

f) Discuss in brief the antidotes.

g) Describe the treatment of chronic arsenic poisoning

P.T.O.

Q3) Write short notes on any three: **[15]**

a) Tetracycline

b) Gastric larage

c) Antimetabolites

d) Aminoglycoside antibiotics

e) Antileprotic drugs

SECTION - II

Q4) Difine hospital pharmacy. Explain in brief about different drug distribution systems in hospital. **[10]**

OR

Define clinical research. Discuss in brief the types and phases of clinical research.

Q5) Solve any five: **[15]**

a) Write the responsibilities of investigator in clinical trials.

b) Define drug interaction. Explain drug interaction during drug absorption.

c) Discuss the methods and importance of prescription recording.

d) Classify adverse drug reaction. Write about teratogenic effects.

e) What are the rate and responsibilities of hospital pharmacist?

f) Define compliance. Write the reasons for patient non compliance.

g) Write the importance of informed consent document.

Q6) Write short notes on any three: **[15]**

a) Institutional Review Board (IRB).

b) Therapeutic Drug Monitoring (TDM).

c) The Belmont report.

d) Patient Counselling.

e) Inpatient and outpatient care.

Total No. of Questions : 6]

SEAT No. : [ ]

[Total No. of Pages : 2

P1415

[5049] - 46

F.Y. B.Pharmacy.

PHARMACOGNOSY - III

(2008 Pattern)

Time : 3 Hours] ***[Max. Marks : 80***

Instructions to the candidates :

1) ***All questions are compulsory.***
2) ***Figures to the write indicates full marks.***
3) ***Answers for two sections should be written in two separate answer sheets.***

SECTION - I

Q1) Describe systematic pharmacognostic study of Opium. **[10]**

OR

Discuss in detail biosynthetic pathway for isoquinoline alkaloids. **[10]**

Q2) Solve any THREE : **[15]**

a) Give brief account of Liquorice and its role as a natural flavonoids.

b) Discuss the following drugs

i) Punarnava

ii) Shankhapushpi

c) Draw neat labeled diagram of T.S. of Datura. Discuss its microscopic features.

d) Discuss in detail cardiovascular drugs from marine source.

Q3) Write short notes on (Any THREE) : **[15]**

a) Derris root

b) Plant allergens

c) Purine alkaloids

d) Chemistry of tropane alkaloids

P.T.O.

SECTION-II

Q4) Explain how Phytochemical investigation is done with special reference to preliminary phytochemical investigation. **[10]**

OR

Give Principles of Ayurveda. Discuss in detail different dosage forms of Ayurveda with their evaluation parameters. **[10]**

Q5) Solve any THREE **[15]**

a) Define herbal drug interaction and explain toxicity and interaction of St John's Wort.

b) Write extraction process and general characterization of Curcumin.

c) Describe in brief application of chromatographic techniques in evaluation of herbal drugs.

d) Describe structural elucidation of Quinine.

Q6) Write Short notes on (Any THREE) **[15]**

a) Production and quality control of skin care herbal product

b) Cannabis toxicity and interactions

c) Isolation and characterization of caffeine

d) Structural elucidation of Reserpine

Total No. of Questions : 6]

SEAT No. : [ ]

[Total No. of Pages : 2

P1416

[5049] - 47

Final Year B.Pharm.

PHARMACEUTICAL JURISPRUDENCE

(2008 Pattern)

Time : 3 Hours] ***[Max. Marks : 80***

Instructions to the candidates :

1) ***Question Nos. 1 and 4 are compulsory.***

2) ***Out of remaining solve 2 questions from Section I and 2 questions from Section - II.***

SECTION - I

Q1) Write in details about objectives and salient features of consumer protection act. **[10]**

OR

Write in details procedure of inspections of drug and formulations and qualifications and responsibilities of drug inspector as per Pharmacy act.

Q2) Attempt any five (3marks each) **[15]**

a) Explain in brief objectives of cyber law.

b) What in brief about advertisement permitted by act

c) Write silent feature of education regulations

d) Explain schedule X

e) Write advantages of DPCO

f) Write objectives of narcotic drugs and psychotropic substances act 1985

g) Explain in brief adulterated drug

Q3) Attempt any Three (each 5 marks) **[15]**

a) Explain in details about consumer forums.

b) Write in brief about industrial safety and health.

c) Write functions and working of pharmacy council of India.

d) Write short note on Scheduled M.

e) Write objectives of D and C Act 1940.

P.T.O.

SECTION - II

Q4) Write Silent features of Indian Patents Act 1970 with latest amendments. **[10]**

OR

Elaborate Trade mark, copyright and Industrial design with respect to Pharmaceutical Industry under IPR.

Q5) Attempt any five (3marks each) **[15]**

a) Explain Criteria for obtaining patent

b) What are provisional and complete specifications

c) What are generic drugs

d) Explain Exclusive Marketing Right

e) What is Hatch Waxman Act

f) Write Provisions of compulsory license

g) Enlist criteria for Opposition to Grant of Patent

Q6) Attempt any Three (each 5 marks) **[15]**

a) Explain patent infringement

b) Write short note on patent certification

c) Write significance and contents of NDA

d) Write short note on Therapeutic Goods Administration (TGA)

e) Write short note on Drug Master file