PURUS – VII (2011 COURSE): WINTER - 2014
SUBJECT : MEDICINAL CHEMISTRY – III

Day : Monday
Date : 10-11-2014

Time : 2·00 P.M. To 5-00 PM,
Max. Marks : 80

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 **SEPARATE** answer books.
3) Figures to the right indicate **FULL** marks.

SECTION – I

Q.1 Attempt **ANY FIVE** of the following: **[10]**

a) Write down the synthesis of Acedapsone.
b) Give any two example of Cinchona alkaloid with their structure.
c) Give the structure of Hexyl resorcinol.
d) Give any two examples of Halophors with their structure.
e) Give the synthesis of Isoniazide.
f) Give any two example of nitrogen mustard with their structures.

Q.2 What are alkylating agents? Classify and discuss in detail different alkylating agents. **[15]**

Q.3 Why treatment to mycobacterial infection difficult? Give classification of mycobacterial infections. Explain in brief INH, Ethambutol and Streptomycin as Anti TB agents. **[15]**

Q.4 Write short notes on **ANY THREE** of the following: **[15]**

a) Anthelminitics
b) Phenol and their derivatives as antiseptics
c) Antiamoebic drugs
d) Antiviral agents

SECTION – II

Q.5 Attempt **ANY FIVE** of the following: **[10]**

a) Give any two examples of Cephalosporins.
b) Draw structures of different isomers of Chloramphemicol.
c) What are digestants? Give their example.
d) Give example and structure of Sulfonamide used for treatment of eye infection.
e) Give the structure of Nalidixic acid.
f) Give any two examples of Tetracylin class of antibiotic with their structure.

Q.6 Explain in detail the chemistry, synthesis, SAR, MOA, Biological activity uses and side effects of Chloramphenicol. **[15]**

Q.7 a) Give chemistry of Sulfonomides. **[08]**

b) Explain synthetic Antifungal agents. **[07]**

Q.8 Write short notes on **ANY THREE** of the following: **[15]**

a) Polyene antibiotics
b) Purgatives

PURUS - (2011 COURSE) – VII: WINTER – 2014
SUBJECT: DOSAGE FORM DESIGN -IV

Day: Friday
Date: 14-11-2014

Time: 2.00 P.M. To 5.00 P.M
Max. Marks: 80

N.B.:

1) **Q. No. 1** and **Q. No. 5** are **COMPULSORY**.
2) Attempt **ANY TWO** questions from each section.
3) Use **SEPARATE** answer sheets for both the sections.
4) Figures to the right indicate **FULL** marks.

SECTION – I

Q.1 Solve **ANY FIVE** of the following: **(10)**

a) Draw structure of Liposome.
b) What are ideal characteristics for a drug to be given by intranasal route?
c) Enumerate various classes of controlled drug delivery systems.
d) Draw a neat labeled diagram of Norplant Trasdermal Inplant.
e) How do Transderm Nitro and Nitro Dur system differ?
f) Enlist various polymers used in controlled DDS.
g) Explain how controlled release formulations are more beneficial than sustained release formulations.

Q.2 a) State the applications of microencapsulation technique. Discuss microencapsulation by coacervation technique. **(08)**

b) Enlist different polymers used in microencapsulation and Discuss microencapsulation by air suspension method. **(07)**

Q.3 a) Discuss the mechanistic approach for release of drug from matrix DDS. **(08)**

b) Explain influence of polymer solubility on release profile of drug from controlled DDS. **(07)**

Q.4 Write notes on **ANY THREE** of the following: **(15)**

a) Brandt's activated model
b) Osmotically activated drug delivery system
c) Effect of crystallinity and fillers on release profile of drug in controlled DDS
d) Intra nasal drug delivery systems
e) Characteristics of liposemes and niosomes

SECTION - II

Q.5 Solve **ANY FIVE** of the following: **(10)**

a) State the difference between QC and QA.
b) Define GMP and state its components.
c) Give the objectives of quality management system.
d) Give an account of sampling formats.
e) What is SOP? Give SOP on stability testing.
f) Give a format for die-punch cleaning record.

Q.6	**a)**	What are cGMP's? Discuss the significance of documentation in cGMP's.	**(08)**
	b)	What is total quality management?	**(07)**
Q.7	**a)**	What is process validation? What are various types of validation?	**(08)**
	b)	Discuss the validation of process of sterilization by autoclaving.	**(07)**
Q.8		Write notes on **ANY THREE** of the following:	**(15)**
	a)	ICH guidelines for accelerated stress testing of formulations	
	b)	Parameters of equipment calibration	
	c)	IPQC in manufacturing and packaging of formulations	
	d)	Photostability of finished product	
	e)	GLP	

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PURUS – VII (2011 COURSE): WINTER – 2014
SUBJECT: BIOPHARMOCEUTICS AND PHARMACOKINETICS

Day: Monday
Date: 17-11-2014

Time: 2.00 P.M. To 5.00 P.M
Max. Marks: 80

N.B.:

1) **Q. No. 1** and **Q. No. 5** are **COMPULSORY**.
2) Out of the remaining solve any **TWO** from Section –I and Section –II.
3) Figures to the right indicate **FULL** marks.
4) Answers to both the sections should be written in **SEPARATE** answer books.
4) Draw neat diagrams **WHEREVER** necessary.

SECTION-I

Q.1 Solve any **FIVE** of the following: **(10)**

a) Give dose adjustment in renal failure.
b) Discuss carrier mediated transport.
c) Thiopental has rapid onset of action followed by rapid termination of action. Explain.
d) Explain influence of diluents on bioavailability of oral tablets.
e) Discuss concept of enzyme induction and highlight its significance.
f) Give the equations to obtain fraction of drug in plasma (Fp) and fraction of drug outside plasma (Fop).

Q.2 **a)** Explain the factors related to drug interactions with respect to protein drug binding and highlight its clinical significance. **(08)**
b) Describe in detail various patient related factors affecting drug absorption. **(07)**

Q.3 **a)** Discuss the assumptions, limitations and significance of pH- partition hypothesis. **(08)**
b) Explain the factors influencing renal excretion of drug. **(07)**

Q.4 Write notes on any **TWO**: **(15)**

a) Bioactivation and its significance
b) Physiological barriers to the drug distribution
c) Theories of drug dissolution

SECTION-II

Q.5 Solve any **FIVE** of the following: **(10)**

a) Explain the objectives of bioavailability studies.
b) Define bioequivalence and give its objectives.
c) What are the advantages of urinary data over plasma data?
d) Explain in short: C_{max} and t_{max}
e) Name the methods used to calculate K_E from urinary excretion data.
f) Explain trapezoidal rule.

Q.6 **a)** Explain how, the plasma concentration remains steady as long as constant rate i.v. infusion is continued, when an i.v. bolus injection is given as a loading dose before starting i.v. infusion. **(08)**
b) Discuss the methods of estimation of bioequivalence parameters. **(07)**

Q.7 **a)** Discuss the types of physiological models. **(08)**
b) Discuss in detail Wagnor-Nelson method, to obtain absorption rate constant ka. **(07)**

Q.8 Write notes on any **TWO**: **(15)**

PURUS – VII (2011 COURSE): WINTER – 2014
SUBJECT : PHARMACOGNOSY – III

Day : Friday
Date : 21-11-2014

Time : 2.00 P.M. To 5.00 P.M.
Max. Marks : 80

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 **SEPARATE** answer books.
3) Draw neat and labeled diagram **WHEREVER** necessary.
4) Figures to the right indicate **FULL** marks.

SECTION – I

Q.1 Attempt **ANY FIVE** of the following: **[10]**

a) What are condensed tannins?
b) Give the biological source and chemical constituents of Lemon.
c) Give the identification tests for Aloe.
d) Give the identification tests for Benzoin.
e) Give the biological source and chemical constituents of Turmeric.
f) Give the biological source and chemical constituents of Hops.

Q.2 a) Write exhaustive note on Psoralea. **[08]**
b) Give the general biosynthetic pathways of Anthocyanins. **[07]**

Q.3 a) Give pharmacognostic details of Senna. **[08]**
b) Give pharmacognostic details of Pale catechu. **[07]**

Q.4 Attempt **ANY THREE** of the following: **[15]**

a) Give pharmacognostic details of Khellin.
b) Differentiate between hydrolysable and non-hydrolysable tannins.
c) Give pharmacognostic details of Podophyllum.
d) Discuss the T.S. of Ginger.

SECTION – II

Q.5 Attempt **ANY FIVE** of the following: **[10]**

a) Define and differentiate between pseudo – alkaloids and proto – alkaloids with suitable examples.
b) Give the biological source and chemical constituents of Pilocarpus.
c) Give the identification tests for true alkaloids.
d) Define Eculle.
e) Give the biological source and chemical constituents of valerian.
f) Give the biological source and chemical constituents of veratrum.

Q.6 a) Write exhaustive note on volatile oils along with their classification and methods of extraction. **[08]**
b) Describe diterpenes and give pharmacognostic details of Taxus. **[07]**

Q.7 a) Define alkaloids; give their classification and identification tests of purine alkaloids. **[08]**
b) Give pharmacognostic details of black pepper and write their extraction protocol. **[07]**

Q.8 Attempt **ANY THREE** of the following: **[15]**

a) Give pharmacognostic details of Rauwolfia.

PURUS-VII (2011 COURSE) WINTER: 2014
SUBJECT: CLINICAL PHARMACY

Day: Wednesday
Date: 19-11-2014

Time: 2:00 P.M. TO 5:00 P.M.
Max. Marks: 80

N.B:

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

SECTION-I

Q.1 Answer **ANY FIVE** of the following: **(10)**

a) What are the components of drug therapy monitoring?
b) Classify medical ward rounds.
c) Define Patient Counseling.
d) Expand the following abbreviation. i) MIC ii) MBC
e) Mention normal range of Sr. Potassium.
f) Name cardiac enzymes.

Q.2 a) Enlist different Hematological tests. Explain RBC indices in detail. **(08)**

b) Differentiate Microcytic and Megaloblastic anemia with the help of laboratory investigations. **(07)**

Q.3 Explain the liver function tests that demonstrate general liver functions and hepatocellular injury. **(15)**

Q.4 Write short notes on **ANY THREE** of the following: **(15)**

a) DUE Cycle
b) Hypo and Hypernetremia
c) Patient History Interview
d) Thyroid function tests

SECTION-II

Q.5 Answer **ANY FIVE** of the following: **(10)**

a) Expand the following abbreviations GCP and ICH.
b) Define Poison information service.
c) Define clinical trial.
d) Write the aims of Pharmacovigilance.
e) What is Phase '0' trial?
f) What are advantages and disadvantages of tertiary sources used for drug information?

Q.6 a) Define and classify Adverse Drug Reactions. **(08)**

b) Discuss role of Pharmacist in management of Adverse Drug Reactions. **(07)**

Q.7 Discuss systematic approach for Drug information service. **(15)**

Q.8 Write short notes on **ANY THREE** of the following: **(15)**

a) Clinical Pharmacist in clinical trial