PURUS-VI (SEMESTER PATTERN): APRIL /MAY : 2014
SUBJECT: PHARMACOGNOSY -III

Day: Thursday
Date: 08-05-2014

Time: 10.00 A.M. To 1.00 P.M.
Max.Marks:80

N.B.:

1) Questions No. **1** and **5** are **COMPULSORY**. Out of remaining answer 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 book.

SECTION -I

Q.1 Attempt any **FIVE** questions **(10)**

a) Differentiate between natural camphor and synthetic camphor
b) What is Diastase? Give its uses.
c) Give identification tests for Benzoin.
d) What is eculle? Where it is applied?
e) What is Bhringraj? Give its uses and chemical constituents.
f) Explain Bromelain
g) Give identification tests for Cinchona alkaloids.

Q.2 a) Explain the chemistry, biosynthesis and extraction of volatile oils. **(8)**

b) Discuss the pharmacognostic and microscopical characters of Dill. **(7)**

Q.3 a) Write an exhaustive note on imunomodulators. Explain Rasayana and discuss Tinospora as immunomodulator. **(8)**

b) Give the pharmacognostic details of Guggul. **(7)**

Q.4 Write short notes on any **THREE** **(15)**

a) Tea
b) Tulsi
c) Papain
d) Cannabis
e) Nutmeg

SECTION -II

Q.5 Attempt any **FIVE** questions **(10)**

a) Define and differentiate between true alkaloids and pseudo alkaloids.

b) What is Trypsin? Give its uses.

c) Give biological sources, chemical constituents and uses of Ashwagandha.

d) What is Kantkari? Give its biological sources and uses.

e) Give traditional uses of Jatamansi.

f) Give biological sources, chemical constituents and uses of Musk.

g) Give identification tests for Turmeric.

Q.6 **a)** Explain pharmacognostic details of Opium. Give the extraction and identification of opium alkaloids. **(8)**

b) Explain benzoin and differentiate between Siam benzoin and Sumatra benzoin. **(7)**

Q.7 **a)** Explain marine drugs. Classify them and highlight antibiotic drugs from marine source. **(8)**

b) Give pharmacognostic details and microscopical characteristics of Ginger. **(7)**

Q.8 Write short notes on any **THREE** **(15)**

a) Belladona

b) Lahsun

c) Valerian

d) T. S. clove

e) Taxus

* * * * *

PURUS – VII: APRIL/MAY-: 2014 (Sem. Pattern)

SUBJECT: BIOPHARMACEUTICS AND PHARMACOKINETICS

Day: Friday
Date: 02.05.2014

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** Attempt **ANY TWO** of the remaining from each section.
2) Figures to the right indicate **FULL** marks.
3) Answer to the both sections should be written in **SEPARATE** answer book.

SECTION – I

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

a) Define volume of distribution and renal clearance.
b) Explain the mechanism of absorption for vit. B_{12}.
c) Explain the interfacial barrier model for drug dissolution.
d) What are the consequences of biotransformation?
e) Thiopental shows fast onset of action followed by rapid termination of action. Explain.
f) How can competition for active tubular secretion be of clinical benefit?

Q.2 Explain the influence of following factors on drug absorption. **(15)**

i) Particle size ii) Polymorphism

Q.3 a) Explain the effect of urine pH and drug pk_a on renal clearance. **(08)**
b) Explain the significance of protein-drug binding. **(07)**

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

a) Chemical factors affecting biotransformation.
b) Physiological barriers to drug distribution.
c) Manufacturing variables affecting drug absorption.

SECTION - II

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

a) List the pharmacokinetic and pharmacodynamic parameters as obtained from plasma concentration time profile.
b) What are the causes of non linear kinetics?
c) What are the objectives of bioavailability studies?
d) Explain the trapezoidal rule to determine AUC.
e) Highlight the disadvantages of compartmental modeling.
f) List the approaches to improve bioavailability.

Q.6 a) Explain the method of residuals to determine K_a. **(08)**
b) What is meant by pharmacokinetic modeling? Give its objectives. **(07)**

Q.7 a) Explain the use of urinary excretion data for determination of k_E following IV bolus administration. **(07)**
b) Give the mathematical treatment for assessment of pharmacokinetic parameters following I.V. Infusion. **(08)**

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

a) Bioequivalence Studies
b) Compartmental Modeling
c) Pharmacodynamic approach to determine bioavailability

PURUS- VII :(SEMESTER PATTERN) April- May - 2014
SUBJECT: MEDICINAL CHEMISTRY-III

Day: Tuesday
Date: 22-04-2014

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

N.B.:

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

SECTION-I

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

a) What are polyene antibiotics. Give their examples.
b) Give the synthesis of Hexyl resorcinol.
c) Give examples Sulfonomides used for eye infections
d) Give any two examples of Quaternary ammonium compounds used as anti-infective agents.
e) Give the structures of any two natural penicillins.
f) What are sulfones Give the structures of any one derivative of dapsone.
g) Give any two nitroheterocyclics used as antimicrobial agents

Q.2 a) Define antibiotics. Explain in brief the chemistry and mechanism of action of β- lactum antibiotics. **(10)**
b) What are interferons. Explain its uses and application. **(05)**

Q.3 a) What are N_1 Substituted sulfonamides? Give its chemistry and mechanism of action. **(10)**
b) Write the synthesis of Any **TWO**: **(05)**
i) Sulfacetamide ii) Sulfapyridine iii) Dapsone

Q.4 Write short notes on: **(15)**
i) SAR of phenols ii) Antifungal Antibiotics iii) Trypanosomiasis

SECTION-II

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

a) Give the synthesis of proguanil.
b) Give the synthesis of Ethambutol.
c) Give any two examples of anticancer antibiotics.
d) Give the structure of folic acid.
e) Give the examples of heterocyclic antifungal agents along with their structure.
f) Give examples of any two alkylating agents.
g) Give any two medicinal dyes along with their structure.

P. T. O.

Q.6 Give life cycle of malarial parasite. Classify antimalarial agents. Give the chemistry of 4 amino quinolines along with synthesis of any one from this class. **(15)**

Q.7 **a)** What are the different causes of cancer. Discuss in detail anatimetabolites as anticancer agents. **(10)**

b) What are the difficulties involved in the treatment of tuberculosis. **(05)**

Q.8 Write short notes on: **(15)**

a) SAR of Quinolones

b) Drugs used for nematode infections

c) Digestants and purgative as GIT agents

* * * * *

PURUS - VIII: APRIL/MAY - 2014
SUBJECT: PHARMACEUTICAL ANALYSIS - V

Day: Monday
Date: 28-04-2014

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** from each section.
2) Figures to the right indicate **FULL** marks.
3) Answers to both the section should be written in the **SEPARATE** answer books.

SECTION - I

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

a) Explain Bohr's Theory.
b) Draw well labeled diagram of pre mix burner.
c) Explain principle of flame photometry.
d) Draw schematic diagram of FES.
e) Explain the process of atomization in flame photometry.
f) Define Immunoassay.

Q.2 Discuss the instrumentation and applications of x-ray diffraction. **(15)**

Q.3 Explain different types of ELISA techniques in detail. **(15)**

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

a) AAS and FES technique comparison
b) Atomizers in AAS
c) Bragg's law
d) Interferences in flame photometry

SECTION - II

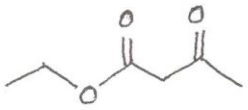
Q.5 Answer **ANY FIVE** of the following: **(10)**

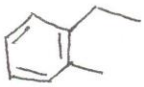
a) Define Base peak in MS.
b) Explain coupling constant in NMR.
c) Give reasons for using TMS as internal standard in NMR.
d) List out the factors affecting chemical shift.
e) Give hypothetical NMR spectra for 1- Propyl bromide.
f) What do you mean by HDI - Explain.

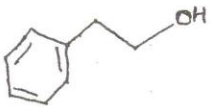
Q.6 Explain the principle, construction and working of mass spectrometer. **(15)**

P.T.O.

Q.7 Write the NMR chemical shift and multiplicities of following structures. **(15)**

a) 

c) 

b) 

d) 

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

a) Fragmentation pattern rules in MS.

b) Spin-spin coupling.

c) Effect of electron with drawing groups on NMR chemical shift values.

d) Write the chemical shifts of various protons.

* * * * *