

## FACULTY OF PHARMACY

B. Pharmacy III Year I – Semester (Main) Examination, November 2013

Subject: Pharmaceuticals Technology (Pharmaceutics – II)

Time: 3 Hours

Max.Marks: 70

**Note: Answer all questions. All questions carry equal marks.**

- 1.(a) Explain the properties and selection of preservatives and antioxidants in pharmaceutical preparations. (8)
- (b) Describe in detail selection of organoleptic agents for liquid orals. (6)
- OR**
- (c) Define pharma gel A and pharma gel B. (4)
- (d) Describe manufacture of hard gelatin capsule. (6)
- (e) Explain two filling methods for hard gelatin capsules. (4)
- 2.(a) Define stoke's law. Explain flocculated and deflocculated suspensions. (7)
- (b) Explain formulation and stability of suspension. (7)
- OR**
- (c) Discuss in brief formulation of emulsions. (7)
- (d) Write a note on HLB value and shelf life of emulsion. (7)
- 3.(a) Classify tablets. Mention the advantages of tablets. Explain the various excipients used in the preparation of tablets. (8)
- (b) Mention quality control tests of tablets. (6)
- OR**
- (c) Classify tablet coating process. Write the advantages and disadvantages of sugar coating and film coating. (5)
- (d) Explain defects of coating. (9)
- 4.(a) What are pyrogens? Explain pyrogen testing in detail. (7)
- (b) Explain quality control of parenteral preparations. (7)
- OR**
- (c) Explain formulations of eye drops. (6)
- (d) Explain quality control of eye drops. (5)
- (e) What are the special instructions to be printed on the eye drop container according to drugs and cosmetics act? (3)
- 5.(a) Define aerosol. Explain various propellants used in the manufacture of aerosols. (6)
- (b) Explain various manufacturing and packing methods of aerosols. (8)
- OR**
- (c) Describe various quality control tests for plastic and glass packaging system. (10)
- (d) Write a note on interactions of formulation and primary packaging systems. (4)

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**FACULTY OF PHARMACY****B. Pharmacy III-Year I-Semester (Main) Examination, November 2013****Subject : Pharmacognasy - II****Time : 3 Hours****Max. Marks: 70****Note: Answer All questions. All questions carry equal marks.**

- 1.(a)(i) Write the general tests for detection of alkaloids. (6)  
 (ii) Give biological source, chemical structures of active constituents of cinchona and nuxvomica. (8)

**OR**

- (b) Mention any one phytopharmaceutical of each belonging to indole and tropane group of alkaloids. Give their biological source, chemical structures and uses. (14)

- 2.(a)(i) Write the definition of glycoside with suitable examples and discuss the general test for glycosides. (8)  
 (ii) Write biological source and chemical structure of Digoxin and sennosides. (6)

**OR**

- (b)(i) Write information notes on digitalis. (6)  
 (ii) Mention glycosides containing crude drugs. Give biological source chemical structure of chief active constituent and uses of any one crude drug belonging to each of them. (8)

- 3.(a)(i) Discuss the isolation methodology of (A) Caffeine from tea and (B) Quinine from cinchona. (6)  
 (ii) Write information notes on (A) Taxol (ii) Clove (8)

**OR**

- (b)(i) Define plant tissue culture and discuss the various steps involved in the initiation of callus from an organ explant. (8)  
 (ii) What is biotransformation? Write conditions for biotransformation reactions. (6)

- 4.(a)(i) Discuss the immobilized plant cell culture technology. (10)  
 (ii) Write about embryogenesis. (4)

**OR**

- (b)(i) Write a note on types of herbal formulations. (8)  
 (ii) Discuss on the "Traditional system of medicine and their status in India". (6)

- 5.(a)(i) Describe the phyto pharmaceuticals of commercial significance with examples. (8)  
 (ii) Describe the method of preparation with examples of (A) Asawas (6)  
 (B) Churnas

**OR**

- (b) Discuss about various methods of quality control and standardization of Herbal formulations. (14)

**FACULTY OF PHARMACY****B. Pharmacy III-Year I-Semester (Main) Examination, November 2013****Subject : Pharmacology - I****Time : 3 Hours****Max. Marks: 70****Note: Answer All questions. All questions carry equal marks.**

- 1.(a)(i) Write about various factors influencing drug action. (10)  
 (ii) What is therapeutic? Explain its clinical importance. (4)

**OR**

- (b) Write notes on the following:  
 (i) Biotransformation of drugs (7)  
 (ii) Drugs acting on ion channels (7)
- 2.(a) Write the mechanism of action, uses and adverse effects of (14)  
 (i) Adrenaline (ii) Neostigmine  
 (iii) Atropine (iv) Salbutamal
- OR**
- (b) Write about the following: (7+7)  
 (i) Muscarinic receptors  
 (ii) Cholinesterase inhibitors
- 3.(a) What is schizophrenia? Classify drugs used in its treatment. Write the pharmacology of phenytoin. (14)

**OR**

- (b) Write the mechanism of action, adverse effects and therapeutic uses of following. (14)  
 (i) Diclofenac (ii) Morphine  
 (iii) xylocaine (iv) phenobarbitone
- 4.(a)(i) Write about brochodilators. (7)  
 (ii) Write about treatment of cough. (7)
- OR**
- (b) What is arrhythmias? Classify drugs used in cardiac arrhythmias. Discuss the pharmacology of quinidine. (14)
- 5.(a) Write short notes on the pharmacology of : (7+7)  
 (i) H<sub>2</sub> receptor blockers  
 (ii) Anti diarrhoeals
- OR**
- (b) Classify diuretics. Discuss how high ceiling diuretics act. What are the clinical uses of diuretic and anti diuretics? (14)

## FACULTY OF PHARMACY

B. Pharm. III Year I-Semester (Main) Examination, October 2013

Subject : Medicinal Chemistry – I

Time: 3 Hours

Max.Marks: 70

**Note: Answer all questions. All questions carry equal marks.**

- 1.(a) i) Discuss in detail the conjugation reactions involved in the drug metabolism. 7  
 ii) Explain how the following physico-chemical properties influence the biological action of a drug molecule.  
 a) Partition coefficient (b) Chelation 7  
**OR**
- (b) i) Describe different prodrug approaches involved in the prolongation of drug activity and masking drug toxicity. 7  
 ii) Explain the importance of bio-isosterism in drug design. 7
- 2.(a) i) Explain the S.A.R. of  $\beta$ -adrenergic blocking agents. 6  
 ii) Write synthesis and uses of (a) Meprobamate (b) Dicyclomine. 8  
**OR**
- (b) i) Classify anti cholinergics giving two examples for each class with structures, mechanism of action and uses. 8  
 ii) Write the synthesis and therapeutic uses of (a) Atenolol (b) Carbachol. 6
- 3.(a) i) What are anti arrhythmic drugs? Classify them with examples. 6  
 ii) Outline the synthesis, mechanism of action and uses of (a) Captopril (b) Nifedipine. 8  
**OR**
- (b) i) Classify anti hyper lipidemic agents with suitable example. 6  
 ii) Write a note on cardiac glycosides and their mechanism of action. 6  
 iii) Write the structure and uses of a) Clonidine b) Diltiazem 2
- 4.(a) i) Give the classification of oral hypoglycemics agents with examples. 6  
 ii) Give the synthesis, mechanism of action and uses of a) Furosemide b) Tolbutamide 8  
**OR**
- (b) i) Write a short note on Immuno modulator drugs. 6  
 ii) Write a note on anti thyroid drugs and the synthesis of propylthio uracil. (5+3)
- 5.(a) i) Classify anti histamines /  $H_1$ -receptor antagonists giving one example for each class with structures. 6  
 ii) Write the synthesis, mechanism of action and uses of a) Omeprazole (b) Ranitidine. 8  
**OR**
- (b) i) Write the structural activity relationships and mechanism of action of proton pump inhibitors. 8  
 ii) Write a note on anti coagulants. 6

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## FACULTY OF PHARMACY

B. Pharmacy 3/4 Year I-Semester (Main) Examination, November 2013

Subject : Physical Pharmacy – I

Time: 3 Hours

Max.Marks: 70

**Note: Answer all questions. All questions carry equal marks.**

- 1.(a) Explain the methods to achieve liquefaction of gases. 6  
 (b) Define refractive index. What is molar refraction? 4  
 (c) Write about liquid crystalline state and its applications. 4  
**OR**  
 (d) What is polymorphism? Explain its applications giving suitable examples. 8  
 (e) Write the principle and applications of differential scanning calorimetry. 6
- 2.(a) State second law of thermodynamics. How do you calculate efficiency of steam engine? 8  
 (b) Define and explain enthalpy and entropy. 6  
**OR**  
 (c) State and explain Hess's law of constant heat summation. 7  
 (d) Define free energy. Write about free energy functions and its applications. 7
- 3.(a) Define Raoult's law. Explain deviations from Raoult's law. 7  
 (b) Explain the concept of activity and activity coefficients. 7  
**OR**  
 (c) What are colligative properties? How do you determine freezing point depression? 7  
 (d) Derive the equation for ionization of a weak acid. 4  
 (e) Write about Sorenson's pH scale. 3
- 4.(a) Explain class II methods for calculation of isotonicity. 8  
 (b) What is common ion effect? Derive buffer equation for a weak acid. 6  
**OR**  
 (c) How do you prepare pharmaceutical buffer? Give examples. 7  
 (d) Write the equations for buffer capacity and maximum buffer capacity and explain the terms therein. 4  
 (e) Write a note on physiological buffers. 3
- 5.(a) Explain different types of electrodes. 10  
 (b) Write Nernst equation and explain the terms therein. 4  
**OR**  
 (c) How do you measure pH using glass electrode. 7  
 (d) Explain ion sensitive electrodes. 7

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**FACULTY OF PHARMACY**

**B. Pharmacy III Year I – Semester (Suppl) Examination, March / April 2013**

**Subject: Pharmaceutics Technology (Pharmaceutics – II)**

**Time: 3Hours**

**Max.Marks: 70**

***Note: Answer all questions. All questions carry equal marks.***

- 1.(a) Explain the properties and selection of various adjuvants used in the formulation of tablets and semisolids. (8)
- (b) Explain with examples organoleptic agents. (6)
- OR**
- (c) Mention various filling methods of hard gelatin capsules and explain any two methods? (9)
- (d) Briefly explain evaluation of hard gelatin capsules. (5)
- 2.(a) Explain the difference between flocculated and deflocculated suspensions. (6)
- (b) Explain the identification of various types of emulsions. (8)
- OR**
- (c) Define emulsion. What are multiple emulsion? Write in detail about stability of emulsion. (14)
- 3.(a) Mention various advantages and disadvantages of tablets formulation. Explain various processing problems during compression. (14)
- OR**
- (b) Mention various types of coating processes. What do you mean by enteric coating? Detail about defects of coating. (14)
- 4.(a) Mention various types of parenteral preparations. Explain the formulation of parenterals. (10)
- (b) Write a note on pyrogen testing. (4)
- OR**
- (c) What are the general requirements for the preparation of ophthalmic preparations? Explain the method of preparation of eye ointments. (8)
- (d) Write a note on QC of ophthalmic preparations. (6)
- 5.(a) What are aerosols? Mention the advantages and disadvantages. Explain various types of propellants used in the preparation of aerosols. (7)
- (b) Explain with a neat sketch the parts of aerosol container and materials used in the construction. (7)
- OR**
- (c) What are the ideal properties of good pharmaceutical packaging? Explain glass as a packaging system. (8)
- (d) Write a note on packaging of semisolids. (6)

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## FACULTY OF PHARMACY

## B. Pharmacy III-Year I-Semester (Supplementary) Examination, March / April 2013

## Subject : Pharmacognosy - II

Time : 3 Hours

Max. Marks: 70

*Note: Answer All questions. All questions carry equal marks.*

- 1.(a) Describe the microscopical characters of (6)  
(i) Rauwolfia (ii) Nuxvomica
- (b) Give the chemical constituents and uses of (8)  
(A) Vinca (B) Ephedra (C) Cinchona
- OR**
- (c) Define and classify alkaloids with examples. (5)
- (d) Write the sources, chemistry and therapeutic properties of opium and tobacco. (9)
- 2.(a) Write the Biological source, chemistry and therapeutic uses of Digitalis and (10)  
ashwagandha.
- (b) Describe the microscopy of Senna. (4)
- OR**
- (c) Define and classify glycosides with examples. (6)
- (d) Give the sources, chemistry and mechanism action of any two drugs (8)  
containing glycosides.
- 3.(a) Write the sources, chemistry and uses of (9)  
(i) Cinnamon (ii) Turmeric (iii) Asafoetida
- (b) Define and classify Resin with examples. (5)
- OR**
- (c) Describe the isolation and estimation of quinine from cinchona. (6)
- (d) Discuss the chemistry and therapeutic properties of podophyllum and (8)  
pyrethrum.
- 4.(a) Discuss the industrial application of plant tissue culture technique. (6)
- (b) Classify the culture technique. Explain the process of immobilization (8)  
technique with application.
- OR**
- (c) Explain the process of organogenesis. (6)
- (d) Surface sterilization techniques. (4)
- (e) Macro supplements used in culture media. (4)
- 5.(a) Write note on quality control of raw materials. (7)
- (b) Give preparation of Aswas and Ghritans. (7)
- OR**
- (c) Discuss the traditional systems of medicines practised in India and give their (7)  
significance.
- (d) Give an informative note on discovery of new drugs from natural sources. (7)

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**FACULTY OF PHARMACY**

**B. Pharmacy III-Year I-Semester (Supplementary) Examination, March / April 2013**

**Subject : Pharmacology - I**

**Time : 3 Hours**

**Max. Marks: 70**

***Note: Answer All questions. All questions carry equal marks.***

1.(a) Classify receptors. Explain in detail about G-protein coupled receptor. (14)

**OR**

(b) Explain in detail about different routes of drug administration.

2.(a) Classify sympatholytics. Add a note on B-adrenergic blockers. (14)

**OR**

(b) Classify parasympathomimetic drugs. Write the pharmacological actions of Acetyl choline.

3.(a) Define epilepsy classify antiepileptic drugs. Write the mechanism of action, therapeutic uses and adverse effect of sodium valproate and clobazam? (2+4+4+4)

**OR**

(b) Classify antidepressant drugs write in detail the mechanism of action, therapeutic uses and adverse effect of SSRIs. (6+8)

4.(a) Classify anti hypertensive drugs. Explain the mechanism of action, adverse effects and therapeutic uses of Angiotensin Converting Enzyme inhibitors and blockers. (6+8)

**OR**

(b) What is bronchial asthma? Classify drugs used in treatment of Asthma and explain in detail any two drugs? (2+4+8)

5.(a) Classify Antiulcer agents. Write the mechanism of action, therapeutic uses and adverse effects of proton pump inhibitors and anti histamines. (14)

**OR**

(b) Write about antiemetics. (7)

(c) Write about Spiranalactone. (7)

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**FACULTY OF PHARMACY****B. Pharmacy III-Year I-Semester (Supplementary) Examination, March / April 2013****Subject : Medicinal Chemistry - I****Time : 3 Hours****Max. Marks: 70*****Note: Answer All questions. All questions carry equal marks.***

- 1.(a) Explain in detail the phase-I reactions of drug metabolism with examples. (7)  
 (b) Explain the role of prodrugs in drug design. (7)

**OR**

- (c) Explain different physicochemical properties which influence biological activity. (7)  
 (d) Write the importance of steric features of drugs. (7)

- 2.(a) What are adrenomimetics? Write SAR and uses of adrenergic drugs. (8)  
 (b) Classify parasymphomimetics with examples. (6)

**OR**

- (c) Give the synthesis of (i) Atenolol (ii) Salbutamol. (8)  
 (d) Write the structures and uses of acetyl choline esterase inhibitors. (6)

- 3.(a) Give the classification of Antihypertensive drugs with structures and write the synthesis of captopril and clonidine. (14)

**OR**

- (b) Classify anitarrhythmic drugs with one suitable example for each class. (6)  
 (c) Write notes on antihyperlipidemic agents. (8)

- 4.(a) Define and classify diuretics with examples. (6)  
 (b) Write about hypoglycemic drugs. (8)

**OR**

- (c) Write notes on Immunostimulants. (7)  
 (d) Give the synthesis of  
 (i) Amiloride (ii) Glyclazide (7)

- 5.(a) Write notes on proton pump inhibitors. (7)  
 (b) Explain in detail about anti-coagulation. (7)

**OR**

- (c) Write the synthesis, M.O.A. of following drugs: (8)  
 (i) Citrazine (ii) Ranitidine  
 (d) Explain the SAR of H<sub>1</sub> antagonists. (6)

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## FACULTY OF PHARMACY

B. Pharmacy III Year I – Semester (Supply) Examination, March / April 2013

Subject: Physical Pharmacy – I

Time: 3 Hours

Max. Marks: 70

**Note: Answer all questions. All questions carry equal marks.**

- 1.(a) How is liquefaction of gases achieved? Explain its application in the formulation of aerosols. (8)  
(b) Write a brief note on differential scanning calorimetry. (6)  
**OR**  
(c) State Gibbs phase rule. Explain the phase diagram of phenol-water system. (7)  
(d) Write a note on refractive index and molar refraction. (7)
- 2.(a) State three laws of thermodynamics. (3)  
(b) Derive an expression to determine efficiency of steam engine. (11)  
**OR**  
(c) Write in brief on free energy function and work function. (7)  
(d) Explain Hess's law of constant heat summation. (7)
- 3.(a) State Raoult's law. Explain positive and negative deviations of Raoult's law. (8)  
(b) Define molarity, molality and normality and calculate these for a solution of 36% w/v of hydrochloric acid. (6)  
**OR**  
(c) Explain the concepts of activity and activity coefficients. Write the Debye-Huckel equations for determining activity coefficient. (8)  
(d) What are colligative properties? Name them. Justify the choice of colligative properties in molecular weight determination. (6)
- 4.(a) Define buffer. Derive buffer equation for a weak acid. (9)  
(b) Explain the relationship between pH and solubility. (5)  
**OR**  
(c) Explain different methods for adjusting isotonicity. (8)  
(d) Write a brief note on:  
i) pH indicators ii) Physiological buffer (6)
- 5.(a) How do you measure pH using glass electrode. (8)  
(b) How do you determine pKa using potentiometry. (6)  
**OR**  
(c) Explain the application of oxidation reduction reactions in pharmacy. (9)  
(d) How do catalysts act? What are different types of catalyst? (5)

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