

FACULTY OF PHARMACY**B.Pharmacy III - Year I - Semester (Main) Examination, October/November 2014****Subject: Pharmaceutical Technology (Pharmaceutics - II)****Time: 3 Hours****Max. Marks: 70*****Note: Answer all questions. All questions carry equal marks.***

- 1 Write note on :
 - (a) Flavoring agents (3)
 - (b) Vehicles (3)
 - (c) Diluents (3)
 - (d) Mention the ideal requirements in the selection of adjuvants. (5)

OR

 - (e) Mention various sizes of hard gelatin capsules. Explain the different steps involved in the preparation (filling) into hard gelatin capsule. (9)
 - (f) Explain quality control of hard gelatin capsule. (5)
- 2
 - (a) Describe the composition of flocculated and deflocculated suspension. (7)
 - (b) Explain the manufacture of pharmaceutical suspension. (7)

OR

 - (c) Explain various parameters involved in the selection of equipment in the manufacturing of pharmaceutical emulsions. (7)
 - (d) Describe various formulation parameters to be considered in the preparation of emulsions. (7)
- 3
 - (a) What are the ideal properties of excipients used in tablet formulation? Name few excipients used in tablet formulation. (6)
 - (b) Describe various granulation process used in the preparation of tablets. (8)

OR

 - (c) Define enteric coating and mention the advantages of it. Mention few polymers to achieve enteric coating. (6)
 - (d) Explain various film defects experienced in the process of coating. (8)
- 4
 - (a) Explain in detail environmental conditions to be maintained in parenteral production area. (8)
 - (b) Explain Sham test for pyrogen. (6)

OR

 - (c) Write note on composition of eye drops and eye ointments. (6)
 - (d) What do you mean by artificial tears, mention the composition of it? (2)
 - (c) Describe the quality control tests for eye formulations. (6)
- 5
 - (a) Explain different manufacturing process and packaging of aerosols. What are the pharmaceutical applications of aerosols? (14)

OR

 - (b) Describe plastic as a pharmaceutical packaging system. (7)
 - (c) Explain quality control tests for plastics. (7)

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FACULTY OF PHARMACY

B. Pharmacy 3/4 I - Semester (Main) Examination, October / November 2014

Subject: Pharmacognosy - II

Time: 3 Hours

Max. Marks: 70

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

- 1 (a) Define and classify alkaloids and give color reactions. (6+8)
(b) Write the sources and chemistry of Opium and Vasaka. (6+8)
OR
(c) Give the microscopy of Cinchona and Ephedra. (6+8)
(d) Write the sources, chemistry and therapeutic uses of Rauwolfia and Vinca. (8+6)
- 2 (a) Discuss the chemical and therapeutic importance of anthraquinone glycosides. (5+9)
(b) Give an informative note on Ashwagandha, Dioscoreia and ammi. (8+6)
OR
(c) Discuss about the sources, chemistry and therapeutic uses of Digitalis and Gymnema. (5+9)
(d) Describe the microscopy of Senna and Quassia. (8+6)
- 3 (a) Write the sources, chemical structure and isolation of Rutin from citrus fruits and Caffeine from tea. (7+7)
(b) Discuss the general methods of volatile oils extraction. (7+7)
OR
(c) Give the sources and specific chemical test for asafoetida and Turmeric. (5+9)
(d) Give the source & chemical constituents of Artemisia, Taxus & Podophyllum. (7+7)
- 4 (a) Give an informative note on : (7+7)
(i) Clonal Propagation (ii) Immobilization technique
OR
(b) Write the advantages of plant tissue culture. (7)
(c) Give an informative note on embryo culture. (7)
- 5 (a) Define all leaf constants and stomata. (8)
(b) Write a note on traditional systems of medicines practiced in India. (6)
OR
(c) Discuss the problems in standardization of Herbal medicines. (8)
(d) Define and give the method of preparation of Ghritams, Asawas. (6)

FACULTY OF PHARMACY**B. Pharmacy 3/4 I - Semester (Main) Examination, October / November 2014****Subject: Pharmacology – I****Time: 3 Hours****Max. Marks: 70*****Note: Answer all questions. All questions carry equal marks.***

- 1 (a) Explain in detail about the advantages of different routes of drug administration. (14)
OR
(b) Define Receptor. Classify receptors and explain about G-protein coupled receptors.
- 2 (a) Write short notes on : (7+7)
(i) α -adrenergic blockers
(ii) Anticholinesterases
OR
(b) Classify parasympathomimetic drugs. Write in detail about the pharmacology of acetyl choline. (14)
- 3 (a) Classify Non-steroidal anti-inflammatory agents. Explain the details of any three classes of drugs. (5+9)
OR
(b) Write short notes on : (7+7)
(i) Anti-Parkinson's drugs
(ii) CNS stimulants
- 4 (a) What is hypertension? Classify the drugs used in the treatment of Hypertension. Explain the mechanism of action, therapeutic uses and adverse effects of ACE inhibitors and β -Blockers. (2+4+8)
OR
(b) Write short notes on : (6+8)
(i) Bronchodilators
(ii) Antihyperlipidemic agents
- 5 (a) Define Diuresis. Classify Diuretics and explain mechanism of action. Adverse reactions and therapeutic uses of carbonic anhydrase inhibitors and potassium sparing diuretics. (2+5+7)
OR
(b) Write short notes on : (7+7)
(i) Pharmacology of purgatives
(ii) Anti-diarrheals classification

FACULTY OF PHARMACY**B.Pharmacy 3/4 I - Semester (Main) Examination, October/November 2014****Subject: Medicinal Chemistry – I****Time: 3 Hours****Max. Marks: 70****Note: Answer all questions. All questions carry equal marks.**

- 1 (a) Define and give its significance of following: (4 x 3)
 (i) Ionization (ii) Surface activity (iii) Hydrogen bonding (iv) lipophilicity
 (b) Give the applications of Bio-isosterism. (2)
OR
 (c) Discuss in detail conjugation reactions involved in drug metabolism. (7)
 (d) Write the importance of steric features of drugs. (7)
- 2 (a) Identity the following drug and give its structure and name. (8)
 (i) Nitrite with vasodilator action
 (ii) Iomidazole derivatives with anti-hypertensive action
 (iii) Dihydropyridine derivative with anti arrhythmic action
 (iv) Steroidal compound with positive Inotropic action
 (b) Write a note on HmG – CoA reuctase institutions. (6)
OR
 (c) Give the structure, synthesis MOA and uses of following: (3 x 4)
 (i) Ticlopidine (ii) Captopril (iii) Nefidipine
 (d) How do you differentiate between cardienolides and Bufadinolides? (2)
- 3 (a) Explain the S.A.R. of β -Adrenergic blocking agents. (6)
 (b) Outline the synthesis mechanism of action (MoA) and uses of salbutamol and mecamlamine HCl. (2 x 4)
OR
 (c) Add a note on ganglionic blocking agents. (6)
 (d) Give the structure, MoA and synthesis of isoproferenol and meprobamata. (2 x 4)
- 4 (a) Give the structure, synthesis and adverse effects of (4x3)
 (i) Amrinone (ii) Hydro chlorthiazide (iii) furosemide (iv) Glyclazide
 (b) Add a note on Anti-thyroidal agent. (2)
OR
 (c) Discuss in detail structural activity relationship for Tolbutamide ring. (5)
 (d) Give the structure, synthesis and MoA of following: (3 x 3)
 (i) Acetazolamide (ii) Prophylthiouracil (iii) Amiloride
- 5 (a) Explain in detail S.A.R of H_1 – Anti histaminics. (10)
 (b) Add a note on proton pump inhibitors. (4)
OR
 (c) Give the structure synthesis and MoA of following: (3 x 4)
 (i) Ranitidine (ii) Omeprazole (iii) Diphenhydramine
 (d) List out the coagulation factors. (2)

FACULTY OF PHARMACY**B.Pharmacy 3/4 I - Semester (Main) Examination, October/November 2014****Subject : Physical Pharmacy - I****Time: 3 Hours****Max. Marks: 70*****Note: Answer all questions. All questions carry equal marks.***

- 1 (a) Explain different methods for achieving liquefaction of gases. Write its application in the formulation of aerosols. (8)
 (b) Write about : (i) X-ray diffraction (ii) Liquid crystalline state (6)
OR
 (c) Explain the phase diagram for one component system. (6)
 (d) Write important postulates of kinetic molecular theory of gases. (4)
 (e) Write about solid dispersions. (4)
- 2 (a) Define and explain enthalpy and entropy. (6)
 (b) State and explain first and second law of thermodynamics with applications. (6)
 (c) State Law of conservation of energy. (2)
OR
 (d) Define, explain and write applications of heat of combustion and heat of neutralization. (6)
 (e) Explain isothermal reversible expansion of an ideal gas and maximum work done in reversible expansion. (6)
 (f) Write a note on Gibb's free energy. (2)
- 3 (a) Define molarity, molality, normality. Explain in which situations these expressions are useful. (6)
 (b) Explain Arrhenius theory of electrolyte dissociation and its limitations. (6)
 (c) What are colligative properties? (2)
OR
 (d) How do you determine elevation of boiling point? (6)
 (e) Explain ionization of weak acids. (5)
 (f) Write Debye Huckel's equations. (3)
- 4 (a) Write a note on pharmaceuticals buffers and physiological buffers. (8)
 (b) Explain the relation between pH, pKa and solubility of weak electrolytes. (6)
OR
 (c) How do you prepare a pharmaceutical buffer? (6)
 (d) Explain methods for adjusting isotonicity and pH of solutions. (8)
- 5 (a) How do you measure pH using hydrogen electrode? (6)
 (b) Draw and explain Daniell cell. (6)
 (c) Write Nernst equation and explain the terms therein. (2)
OR
 (d) How do you measure EMF of a cell? (5)
 (e) Write a note on (5+4)
 (i) Catalyst (ii) Oxidation reduction electrodes

FACULTY OF PHARMACY**B. Pharmacy III Year I-Semester (Main) Examination, Marcy 2014****Subject : Pharmaceutical 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 antioxidants and hydrocolloids in pharmaceutical preparations. 8
 (b) Write a note on organoleptic agents. 6
OR
 (c) Describe advantages and disadvantages of hard and soft gelatin capsules. 4
 (d) Describe manufacture and quality control tests for soft gelatin capsule. 10
- 2.(a) What are suspensions? Explain different types of additives used in the preparation of suspensions. 7
 (b) Discuss in brief the formulation of suspension. How will you evaluate the suspensions? 7
OR
 (c) What are emulsions? Discuss in brief about the formulation of emulsions. 8
 (d) What are the different types of identification tests for emulsion? 4
 (e) What are multiple emulsion? 2
- 3.(a) Explain in detail quality control tests for the uncoated tablets with the specifications stated in pharmacopeia? 7
 (b) Describe various problems encountered during tablet compression. 7
OR
 (c) What do you mean by tablet coating? Write about types and rationale of different coating processes. 7
 (d) Describe in detail sugar coating process. 7
- 4.(a) Explain environmental conditions required for the preparation of parenteral preparations. 7
 (b) Describe in brief the various tests which are required to be done for the evaluation of parenteral products. 7
OR
 (c) Explain formulations and manufacture of ophthalmic ointments. 8
 (d) Explain quality control of eye ointments. 6
5. Write in detail quality control tests of aerosols and how are the stability studies of aerosol formulations carried out. 14
OR
 (a) Explain various packaging materials used in primary and secondary packaging. 4
 (b) Explain different types of packaging materials used in parenteral preparation. 10

FACULTY OF PHARMACY**B. Pharmacy 3/4 I – Semester (Supplementary) Examination, March 2014****Subject : Physical Pharmacy – I****Time : 3 hours****Max. Marks : 70****Note : Answer all questions. All questions carry equal marks.**

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| 1 | a) State Gibb's phase rule. Explain the phase diagram of one component system. | 7 |
| | b) What is polymorphism? Write its significance with suitable examples. | 7 |
| | OR | |
| | c) i) Differential scanning calorimetry | 7 |
| | ii) Liquid crystalline state and its applications. | 7 |
| 2 | a) State and explain first law of thermodynamics. | 7 |
| | b) Define and explain Hess's law of constant summation. Write its applications. | 7 |
| | OR | |
| | c) State and explain second law of thermodynamics. | 7 |
| | d) Explain free energy function and applications. | 7 |
| 3 | a) How do you measure osmotic pressure. | 7 |
| | b) Explain activity and activity coefficient. | 7 |
| | OR | |
| | c) State Raoult's law. Explain positive and negative deviations of Raoult's law. | 7 |
| | d) What are colligative properties? Explain the choice of colligative properties in molecular weight determination. | 7 |
| 4 | a) Explain cryoscopic method and sodium chloride equivalent method for adjusting isotonicity. | 7 |
| | b) Explain the influence of buffer capacity and pH on tissue irritation. | 7 |
| | OR | |
| | c) Derive buffer equation for a weak acid. | 7 |
| | d) Write Van Slyke's equation for buffer capacity and maximum buffer capacity and its applications. | 7 |
| 5 | a) Write about : | |
| | i) Ion sensitive electrode | 7 |
| | ii) Measurement of pH using glass electrode | 7 |
| | OR | |
| | b) Explain in detail different types of electrodes. | 10 |
| | c) Write the applications of redox potentials in pharmacy. | 4 |

FACULTY OF PHARMACY**B. Pharmacy III Year I-Semester (Suppl.) Examination, April 2014****Subject : Pharmacognosy – II****Time: 3 Hours****Max.Marks: 70****Note: Answer all questions. All questions carry equal marks.**

- 1 (a) Write the colour reactions and general methods of isolation of alkaloids. 5
 (b) Give the biological source, chemical constituents and uses 9
 a) Belladonna b) Cinchona c) Opium
OR
 (c) Write the chemistry and therapeutic properties Rouwolfia and Vinca. 8
 (d) With neat labelled diagram describe the morphological and microscopical 6
 characters of Nuxvomica.
- 2 (a) Write the sources, chemistry and uses of any two drugs containing glucosides. 8
 (b) Give an informative note on cardiac glycosides. 6
OR
 (c) Write the chemical test for (i) Digitaxose (b) Sennosides. 4
 (d) Write the sources, chemistry and therapeutic importance of Brahmi and 10
 Ashwagandha.
- 3 (a) Write the biological source, chemistry and uses of Artemisia. 9
 (b) Describe the morphological and microscopical characters of Fennel. 5
OR
 (c) Describe the isolation and estimation of sennosides from senna. 6
 (d) Write the chemical constituents and uses of i) Taxus, ii) Podophyllen, iii) Asafoetida 8
 iv) clove.
- 4 (a) What is micropropagation and classify the different techniques with significance of 6
 each technique. 8
 (b) Give an informative note on Biotransformation and Immobilization technique.
OR
 (c) Write about:
 i) Process of organogenesis. 6
 ii) Surface sterilization techniques 4
 iii) Mineral supplements used in culture media. 4
- 5 (a) Narrate the traditional systems of medicines developed in India and give their 5
 importance. 9
 (b) Describe the method of preparation of i) Ghritams ii) Aswas iii) Bhasmas.
OR
 (c) Give an informative note on discovery of new drugs from natural sources. 7
 (d) What are leaf constants and ash value? Give their importance. 7

FACULTY OF PHARMACY**B. Pharmacy III-Year I – Semester (Supplementary) Examination, April 2014****Subject : Pharmacology – I****Time : 3 hours****Max. Marks : 70****Note: Answer all questions. All questions carry equal marks.**

- 1 a) What are various mechanisms of drug action? Explain about receptor mediated drug action in detail. 7+7
- OR**
- b) Write about the following : 7+7
 i) Phase-II reactions ii) Biological half life
- 2 a) Classify parasympathomimetic drugs? Write the pharmacology of Acetyl choline. 14
- OR**
- b) Write the pharmacology of 4+5+5
 i) Dicyclomine ii) Atropine iii) Propranolol
- 3 a) Define parkinsonism? Classify antiparkinson drugs with examples? Write the mechanism of action and therapeutic uses of COMT inhibitors and MAO inhibitors. 14
- OR**
- b) Write the mechanism of action, adverse effects and therapeutic uses of following drugs. 5+5+4
 i) Diazepam ii) Imipramine iii) Lithium carbonate
- 4 a) Classify anti arrhythmic agents? Write the mechanism of action, adverse effects and therapeutic uses of class-I drugs. 14
- OR**
- b) Write short notes on : 7+7
 i) Bronchodilators ii) Vasodilators
- 5 a) Classify diuretics? Write the mechanism of action, therapeutic and adverse effects of following : 14
 i) Furosemide ii) Acetazolamide
- OR**
- b) Write the mechanism of action and therapeutic uses of following drugs. 7+7
 (i) Ondansetron (ii) Pantoprazole

FACULTY OF PHARMACY**B. Pharmacy III-Year I-Semester (Supplementary) Examination, March 2014****Subject : Medicinal Chemistry - I****Time : 3 Hours****Max. Marks: 70****Note: Answer All questions. All questions carry equal marks.**

- 1 (a) (i) Explain protein binding in relation to drug action. (5)
 (ii) Explain the physicochemical properties in relation to biological activity. (9)

OR

- (b) (i) Describe the role of soft drug approach in drug design. (7)
 (ii) Discuss in detail phase-II reactions involved in drug metabolism. (7)
- 2 (a) (i) What are cholinergic agents? Write the structural features necessary for a molecules to show cholinergic activity. (6)
 (ii) Write the synthesis and therapeutic use of (8)
 (A) Salbutamol (B) Prazocin

OR

- (b) (i) Classify Adrenergic blocking agents by giving one example for each category with structures. (6)
 (ii) Write the synthesis, mechanism of action and uses of following drugs (8)
 (A) Atenalol (B) Mecamylamine HCl
- 3 (a) (i) Give the classification of anti hypertensive drugs with examples. (6)
 (ii) Write the synthesis and uses of (8)
 (A) Captopril (B) Clonidine

OR

- (b) (i) Classify anti hyper lipidemic agents with suitable examples. (5)
 (ii) Write a note on cardiac glycosides and mechanism of action. (5)
 (iii) Write the synthesis and mechanism of action of nifedipine. (4)
- 4 (a) (i) Write the general synthesis of sulfonyl ureas. Write their mechanism of action and S.A.R. (8)
 (ii) Write a note on anti thyroid drugs. (6)

OR

- (b) (i) What are diuretics? Classify them with suitable examples. (6)
 (ii) Write the synthesis, mechanism of action and uses of (8)
 (A) Furesomide (B) Acetazolamide
- 5 (a) (i) Write a note on proton pump inhibitors. (6)
 (ii) Write the synthesis, mechanism of action and uses of (8)
 (A) Chlor pheniramine (b) Omeprazole

OR

- (b) (i) Classify H₁ anti histaminic drugs with one example for each class with structures. (6)
 (ii) Write a short note on anti coagulant and mention the synthesis and mechanism of action of warfarin. (8)
