



Code No. : 4420

FACULTY OF TECHNOLOGY
B.Pharm. III Year I Semester (Main) Examination, Nov./Dec. 2010
PHARMACOGNOSY – II

Time : 3 Hours]

[Max. Marks : 70

1. a) Draw and describe morphology and microscopy of
- | | | |
|--|---------------|---|
| i) Ephedra | ii) Rauwoltia | 6 |
| ii) Discuss collection, morphology, chemistry, tests and uses of Belladonna. | | 8 |

OR

- b) i) Give chemical classification of alkaloids with examples. 6
- ii) Write the source of five tropane alkaloidal drugs, give the chemical test and biosynthetic pathway of tropane nucleus. 8
2. a) i) Differentiate between anthracene glycosides and cardiac glycosides. 4
- ii) Write the source of bitter glycosides and discuss any one of them. 10

OR

- b) i) Give the source, structure and applications of
- | | | |
|------------------------------------|--------------|---|
| A) Asmoagandha | B) Momordica | 6 |
| ii) Write the monograph of Gokhru. | | 8 |
3. a) i) Write the principle involved in the isolation of
- | | | |
|--|-------------|---|
| i) Caffeine | ii) Cineole | 6 |
| ii) How do you distinguish volatile oils from Resins ? Describe pharmacognosy of asafoetida. | | 8 |

OR

- b) i) Give the method for isolation, tests and chemistry of a
- | | | |
|----------------------|-------------|----|
| i) Sennasides | ii) Carvone | 10 |
| ii) Define the terms | | |
| i) Volatile Oil | ii) Resin | 4 |



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4. a) i) Give the definition and importance of plant tissue culture. 6
ii) Discuss requirements of an ideal plant tissue culture medium. 8
OR
b) i) Define callus culture and suspension culture. 4
ii) Justify the need of plant tissue culture technique for the production of secondary metabolites. 10
5. a) i) What are basic principles of Ayurveda ?
ii) Write notes on
A) Bhasmas B) Leyhas C) Aristas 4
OR 10
b) i) Give the importance of standardization in quality control of Herbal drugs. 4
ii) Explain briefly various parameters of standardisation for screening of herbal drugs. 10



Code No.: 4421

FACULTY OF TECHNOLOGY
B. Pharm. III Year I Semester (Main) Examination, Nov./Dec. 2010
PHARMACOLOGY – I

Time : 3 Hours]

[Max. Marks : 70

- Note : 1) Answer all questions.*
2) All questions carry equal marks.

1. a) What are different routes of drug administration ? Compare the merits and demerits of oral and parenteral routes. 7

b) Write short notes on :

A) Biological half-life.

B) Pharmacodynamics

C) Ion channels and drug action.

OR

(2+2+3)

a) What are the factors that influence drug action ? Explain the terms :

A) Tolerance

B) Tachyphylaxis with examples. 7

b) Write short notes on :

A) Biotransformation

B) Drug-Drug interactions. (3+4)

2. a) Classify cholinergic drugs. Discuss the actions of physostigmine and mention its therapeutic uses. 7

b) Write short notes on :

A) α - adrenergic blockers.

B) Clinical uses of atropine. (4+3)

OR

(4+3)



- a) Classify Beta-blockers based on mechanism/effects. Discuss in detail the pharmacological actions of isoprenaline. 7
- b) Write short notes on :
A) Uptake of catecholamines.
B) Cholinesterase inhibitors. (4+3)
3. a) Classify agents used in the treatment of epilepsy. Discuss the mechanism of action of benzodiazepines. 7
- b) Write short notes on :
A) Selective Serotonin Reuptake Inhibitors.
B) L-DOPA. (4+3)
- OR
- a) What is Parkinson's disease ? Classify drugs used in Parkinson's disease and discuss the rationale of the combination of L-DOPA + Carbidopa. 7
- b) Write short notes on :
A) Non sedating anxiolytics.
B) Pharmacological effects of morphine. (3+4)
4. a) What is congestive heart failure ? How does digoxin act as a cardiotonic drug. Mention its side effects. 7
- b) Write short notes on :
A) Procainamide.
B) Beta-2-agonists. (3+4)
- OR
- a) Classify drugs used in the treatment of hypertension. Discuss the pharmacological actions of calcium channel blockers. 7
- b) Write short notes on :
A) HMG-CoA reductase inhibitors.
B) Theophylline. (4+3)



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5. a) Classify drugs used in the treatment of peptic ulcer disease. Discuss the pharmacological actions of H_2 -blockers.

7

- b) Write short notes on :

A) Saline purgatives.

B) Antidiuretics.

(3+4)

OR

- a) What are diuretics ? Classify giving examples for each class. Discuss the mechanism of action of acetazolamide.

7

- b) Write short notes on :

A) Apomorphine.

B) Irritant laxatives.

(3+4)



Code No. : 4418

FACULTY OF TECHNOLOGY

B. Pharmacy III Year I Semester (Main) Examination, Nov./Dec. 2010

PHARMACEUTICAL TECHNOLOGY (Pharmaceutics – III)

Time : 3 Hours]

[Max. Marks : 70

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

1. a) Explain in detail different types of adjuvants used in the pharmaceutical formulations. Explain with examples ? 14

OR

- b) i) Discuss the technology involved in the manufacture of soft gelatin capsule shell. 9
- ii) Write note on quality control tests for soft gelatin capsules. 5
2. a) i) What are suspensions ? Explain different types of additives which are used in the preparation of suspensions. 7
- ii) Discuss in brief about the formulation of suspension. How will you evaluate the suspensions ? 7

OR

- b) i) Define emulsions state the different types of emulsions and also how will you distinguish them. 7
- ii) Write note on stability of emulsion. 7



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3. a) i) Define tablets. Classify tablets with examples. 6

ii) Explain in detail processing problems involved in the compression of tablets. 8

OR

b) i) Write note on granulation properties of the tablets. 7

ii) Explain in detail different types of granulation. 7

4. a) i) What are parenteral products ? Describe the different route of administration of parenteral products with examples. 7

ii) Enumerate in detail different adjuvants used in the preparation of parenteral products. 7

OR

b) i) State the requirements, formulation and evaluation of ophthalmic formulation in detail. 14

5. a) i) What are the different types of propellants used for aerosols. 7

ii) List out the component of an aerosol valves using their function. 7

OR

b) i) List out different containers used in aerosol formulation. 7

ii) Explain with necessary details in the formulation of aerosols. 7



Code No. : 4417

FACULTY OF TECHNOLOGY
B. Pharmacy III Year I Semester (Main) Examination, Nov./Dec. 2010
MEDICINAL CHEMISTRY - I

Time : 3 Hours]

[Max. Marks : 70

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

- a) Explain the importance of bioisosteres and steric features that are specific for elicitation of biologic response.
 - b) Write about protein binding of drugs its advantages and disadvantages.
- OR
- c) Write about various physical, pharmaceutical and chemical methods of improving the solubility of a poorly soluble drug.
 - d) Write about various biotransformation reactions with examples.
2. Write the structures of any four cholinomimetic drugs and discuss the SAR of muscarinic agonists.

OR

Write the pharmacological actions of adrenaline and discuss the SAR of adrenomimetics.

3. Give the classification of antihypertensive drugs with examples. Write the structures of any four antihypertensive drugs. Write the synthesis of
 - i) Captopril
 - ii) Clonidine

OR

Write the mechanism and pharmacological actions of Cardiac glycosides. Discuss the SAR and therapeutic uses of these drugs.



4. Give the classification of diuretics. Write the mechanism of action and therapeutic uses of carbonic anhydrase inhibitors. Give the synthesis of
- Acetazolamide
 - Hydrochlorothiazide

OR

Give the classification of oral hypoglycemic agents. Discuss the mechanism of action and SAR of biguanides. Give the synthesis of

- Tolbutamide
 - Glyclazide
5. Give the classification of anti histamines. Write the structures of any four Amino Propyl (Prophylamino) compounds. Discuss the SAR. Give the synthesis of
- Diphenhydramine
 - Chlorpheniramine maleate

OR

Write the structures of any four proton pump inhibitors and discuss their mechanism of action and therapeutic uses. Write the synthesis of

- Omeprazole
- Ranitidine



Code No. : 4419

FACULTY OF TECHNOLOGY
B. Pharm. III Year I Semester (Main) Examination, Nov./Dec. 2010
PHYSICAL PHARMACY – I

Time : 3 Hours]

[Max. Marks : 70

*Note : 1) Answer **all** questions.*

*2) All questions carry **equal** marks.*

1. a) Explain the postulates of kinetic molecular theory. 6
- b) Explain four applications of DSC with suitable examples. 8

OR

- c) Describe the principle, construction and working of Abbes refractometer. 8
- d) State Gibb's phase rule. Explain the terms involved with definitions and examples. 6
2. a) What are 'reversible' and 'irreversible' processes ? Bring out clearly the differences between the two. 8
- b) Mention all the definitions of a spontaneous process. 6

OR

- c) State and explain the Hess law of constant heat summation with suitable example. 8
- d) State and explain the second law of thermodynamics. 6
3. a) Explain the principle involving the steam distillation. What are its applications ? 6
- b) State and explain the relative lowering of vapour pressure of Raoult's law. Explain its limitations. 8

OR

- c) Describe the Arrhenius theory of electrolytic dissociation with postulates and suitable examples. 8
- d) Describe Ostwald's dilution law with its applications and limitations. 6



4. a) Derive buffer equation for an acid buffer with suitable example. 8
b) Explain the applications of buffers in pharmacy. 6
- OR
- c) Define the terms 'osmotic solution' and 'hypotonic solutions' with suitable examples. 6
d) Explain any two methods of adjusting the tonicity and pH of a solution. 8
5. a) Write the rules to be followed from electrochemical series in selecting the electrodes for a chemical cell. 8
b) Describe the applications of oxidation-reduction reactions (potentials) in pharmacy. 6
- OR
- c) Explain the factors influencing the catalytic reactions with suitable examples. 8
d) Describe the method of determining the electromotive force of a reaction. 6



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FACULTY OF TECHNOLOGY
B.Pharmacy III Year I Semester (Suppl.) Examination, June 2010
PHARMACOGNOSY – II

Time: 3 Hours]

[Max. Marks: 70

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

I. a) i) Define “Alkaloids” and give in detail their chemical classification with suitable examples. 8

ii) State biological source, chief anatomical features, a test for identification and uses of

A) Cinchona and B) Rauwolfia. 6

OR

b) i) Write biological source, chemical nature, a test for identification and uses of A) Emetine and B) Morphine 8

ii) Give chemical structure and uses of alkaloids of Datura and Vinca. 6

II. a) i) Write informative notes on :

A) Brahmi and B) Gymnema 9

ii) State biological source, chief anatomical features, a test for identification, chemical constituents and uses of Liquorice. 6

OR

b) i) Mention any one phytopharmaceutical of each belonging to triosides and tetroosides.

Give biological source, chemical structure, a test for identification of aglycone moiety and uses of any one of them. 5

ii) Write a pharmacognostic note on “Aloes”. 9



III. a) i) Discuss the isolation methodology of
A) Sennosides from senna and B) Quinine from Cinchona. 6

ii) Write the chemical nature, a test for identification, and uses of

A) Eugenol

B) Cinnamaldehyde

C) Curcumin – I and

D) Gaultherin

8

OR

b) i) Discuss the estimation of carvone in Dill oil and isolation of Eugenol from cinnamon. 6

ii) Write informative notes on :

A) Guggul and

B) Podophyllum.

8

IV. a) i) Discuss the nutritional requirements of an ideal plant tissue culture medium. 6

ii) Write a note on production of secondary metabolites of pharmaceutical significance in plant tissue cultures. 8

OR

b) i) Write about organogenesis and embryoculture. 6

ii) Discuss the bioconversion of different classes of secondary metabolites of medicinal plant species. 8

V. a) i) State the regulations for manufacture of Herbal medicines. 8

ii) Describe the method of preparation with examples, of

A) Aristavas

B) Bhasma and

C) Kashayams

6

OR

b) i) Write a note on traditional plant medicines as a source of new drugs. 10

ii) Write informative notes on :

A) Lehyas and

B) Churnas

4

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FACULTY OF TECHNOLOGY
B.Pharm. III Year I Semester (Suppl.) Examination, June 2010
PHARMACOLOGY – I

Time: 3 Hours]

[Max. Marks: 70

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

1. a) i) Define agonist and antagonist with examples. 6
ii) What are different antagonism? Explain in detail about pharmacological antagonism. 8

OR

- b) i) Define bioavailability. 4
ii) Discuss about phase-I and phase-II reactions of biotransformation. 10
2. a) i) Classify cholinergic drugs. 4
ii) Discuss about reversible anticholinesterase. 10

OR

- b) i) Classify α and β adrenergic blocking drugs 6
ii) Write the pharmacology of following drugs :
i) Prazosin (4+4)
ii) Metoprolol.

3. a) i) Discuss about tricyclic antidepressants. 7
ii) Discuss about narcotic analgesics. 7

OR

- b) i) Classify antiparkinsonism drugs. 4
ii) Write the pharmacology of following drugs :
A) Fluoxetine
B) Lithium carbonate (4+3+3)
C) Imipramine.



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4. a) i) Discuss about renin-angiotensin system.

7

ii) Write the pharmacology of following drugs :

A) Salbutamol

B) Disodium cromoglycate.

(4+3)

OR

b) i) Discuss about HMG CoA reductase inhibitors.

7

ii) Write the pharmacology of following drugs :

A) Methyldopa

B) Minoxidil

C) Nitroglycerins.

(3+2+2)

5. a) i) Discuss about high ceiling diuretics.

7

ii) Discuss about H₂-receptor antagonist's.

7

OR

b) i) Classify purgatives.

4

ii) Write the pharmacology of following drugs :

A) Castor oil

B) Lansoprazole

C) Diphenoxylate.

(3+4+3)

FACULTY OF TECHNOLOGY
B. Pharmacy III Year I Semester (Suppl.) Examination, June 2010
PHARMACEUTICAL TECHNOLOGY (Pharmaceutics – II)

Time : 3 Hours]

[Max. Marks : 70

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

1. a) i) Describe the advantages and disadvantages, sizes of hard and soft gelatin capsules. 7
- ii) Give an account on the steps of formulation, filling and sealing of capsule manufacture. 7

OR

- b) i) Evaluation of capsules (Soft gelatin). 4
- ii) Manufacture of soft gelatin capsules. 5
- iii) Hard gelatin capsules – quality control. 5
2. a) i) Define Emulsion and classify the emulsions with examples. 4
- ii) Describe the formulation of emulsions and equipment used. 6
- iii) Multiple emulsions – formation, types and uses. 4

OR

- b) Write notes on the following :
 - i) Deflocculated and Flocculated suspensions. 6
 - ii) Evaluation of suspensions. 4
 - iii) Method of determination of shelf life. 4
3. a) i) Define 'oral solid dosage forms' and classify them. 3
- ii) Describe the manufacturing process of tablets and machines used. 8
- iii) Quality control tests of tablets. 3

OR

- b) i) What is tablet coating ? Write about the types and rationale of different coating processes. 6
- ii) Describe in detail the "sugar coating" process for tablets along with problems and remedies. 8



4. a) i) Describe the production facilities and production steps needed for the manufacture of parenteral injections containing heat labile substances. 14

OR

- b) i) Give an account of the different characteristics of various types of containers and closures used for packing parenteral preparations. 10
- ii) Pyrogens – source, elimination methods. 4
5. a) i) What are plastics ? Enlist the different plastic materials used in packing of formulation. 4
- ii) Add notes on the advantages and disadvantages of Enlisted (above) plastics. 6
- iii) What metals are used for packing ? Describe the characters, advantages and disadvantages of any metal used. 4

OR

- b) Write short notes on :
- i) Aerosol propellants – environmental effects. 4
- ii) Formulation of an aerosol. 5
- iii) Aerosol containers – structure and working. 5

Code No. : 7017

FACULTY OF TECHNOLOGY
B.Pharm.III Year I Semester (Suppl.)
Examination, June 2010
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 of drug metabolism with suitable examples. 8
ii) Write the importance of Bioisosterism in drug design. 6

OR

- b) Explain how the following physico-chemical properties influence the biological action of a drug molecule. 4
i) Partition-coefficient 4
ii) Hydrogen bonding 3
iii) Chelation 3
iv) Redox potential. 3

2. a) i) What are cholinergic agents ? Write the structural features necessary for a molecule to show cholinergic activity. 6
ii) Outline the synthesis of carbachol with its mechanism of action and uses. 8

OR

- b) i) Classify α and β -adrenergic blocking agents giving one example for each category with structure. 6
ii) Write the steps involved in the synthesis of following : 8
A) Salbutamol
B) Prazocin.

3. a) i) Describe the biosynthesis, storage and release of Histamine. 6
ii) Classify antihistamines / H₁-receptor antagonists giving two examples for each class with structures. 8

OR



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- b) i) Write a note on proton pump inhibitors. 6
ii) Write the synthesis, mechanism of action and uses of Ranitidine. 8
4. a) i) What are anti-arrhythmic drugs ? Classify them with examples. 6
ii) Outline the synthesis of captopril and Nifedipine. 8

OR

- b) i) Explain the mechanism of action of ACE inhibitors. Write any two drugs with structures. 6
ii) Outline the synthesis of following drugs :
A) Isosorbide dinitrate 8
B) Clofibrate. 8
5. a) i) Write a note on thyroid and anti-thyroid agents. 7
ii) Explain the importance of Immunosuppressive agents. 7

OR

- b) i) Classify Diuretics based on site of action outline the synthesis of Acetazolamide. 8
ii) Write the chemical name, synthesis , M.O.A. and uses of Tolbutamide. 6



Code No. : 7019

FACULTY OF TECHNOLOGY

B.Pharm. III Year (I – Sem.) (Suppl.) Examination, June 2010

PHYSICAL PHARMACY – I

Time: 3 Hours]

[Max. Marks: 70

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

1. a) i) State and explain ideal gas law and the Vander - Waal equation for real gases. 5
- ii) Explain the rules relating to drawing triangular phase equilibria diagrams. 5
- iii) If 0.50 g of a drug in the vapour state occupies 100 ml at 120°C and 1 atm pressure, what is its approximate molecular weight ? 4

OR

- b) i) Draw a typical phase equilibria diagram for a two component system and explain. 5
- ii) How is differential thermal analysis used in detecting drug-excipient interactions ? 5
- iii) Define refractive index and molar refraction and give their pharmaceutical significance. 4
2. a) i) Define specific heat, sensible heat and latent heat and explain the meaning of energy balance. 5
- ii) State and explain the first law of thermodynamics. 5
- iii) A steam engine operates between the temperatures of 373° and 298° K. What is the theoretical efficiency of the engine ? 4

OR

- b) i) State and explain the second law of thermodynamics. 5
- ii) Explain the concepts of internal energy, enthalpy and bond dissociation energy. 5
- iii) What is the maximum work done in the isothermal reversible expansion of 2 moles of an ideal gas from 1 to 5 liters at 25°C ? 4



3. a) i) What are colligative properties ? How are they useful in finding molecular weights of compounds ? 5
ii) Explain Arrhenius' theory of electrolytic dissociation and give its limitations. 5
iii) Derive an equation for finding the hydrogen ion concentration of a weak acid. 4

OR

- b) i) Define molarity, molality and normality. Explain in which situation each of these concentration expressions is useful. 5
ii) Explain the modern theory of strong electrolytes. 5
iii) What is Sorensen's pH scale ? What are its applications ? 4
4. a) i) Derive the buffer equation for a weak acid and its salt. 5
ii) What are the biological buffer systems present in our body ? 5
iii) Explain the influence of buffer capacity and pH on tissue irritation. 4

OR

- b) i) Give the steps involved in the preparation of a pharmaceutical buffer of a specific pH. 5
ii) What is buffer capacity ? How are buffers used in the pharmaceutical field ? 5
iii) Make the following solution isotonic with respect to an ideal membrane.
- | | | |
|---|-------|-----------|
| Phenacaine hydrochloride | _____ | 0.06 g |
| Boric Acid | _____ | 0.30 g |
| Sterilized distilled water enough to make | _____ | 100.0 ml. |
- The E values of Phenacaine hydrochloride and Boric Acid are respectively, 0.20 and 0.50. 4

5. a) i) Explain the Daniel cell with the help of a neat diagram. 5
ii) Explain the working of a glass electrode. 5
iii) What are promoters and inhibitors ? 4

OR

- b) i) How do you calibrate and operate a pH meter ? 5
ii) Write notes on calomel electrode and hydrogen electrode. 5
iii) What factors affect the catalysis process ? 4

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Code No. : 7020

FACULTY OF TECHNOLOGY
B.Pharmacy III Year I Semester (Main) Examination, November 2009
PHARMACOGNOSY – II

Time: 3 Hours]

[Max. Marks: 70

Note : Answer all questions.

All questions carry equal marks.

- I. a) i) Write the general tests for detection of alkaloids with chemical composition of the reagents. 6
- ii) Describe chief anatomical features of ephedra and cinchona. Give biological source, chemical nature of active constituents, a test for identification and uses of any one of them. 8
- OR
- b) i) Mention any one phytopharmaceutical of each belonging to indole, isoquinoline and tropane group of alkaloids. Give their biological source, chemical structure and uses. 9
- ii) Write informative notes on Shankapushpi. 5
- II. a) i) Write chemical classification of glycosides with suitable examples and discuss the general test for glycosides. 8
- ii) Describe chief anatomical features of Senna and Digitalis. Write biological source and chemical nature of Digoxin. 6
- OR
- b) i) Write a pharmacognostic note on Ashwagandha. 8
- ii) Mention Furano Coumarins and bitter glycosides containing crude drugs. Give biological source, chemical structure of chief active constituent and uses of any one crude belonging to each of them. 6
- III. a) i) Discuss the isolation methodology of 6
- i) Caffeine from tea and ii) Hesperidin from citrus fruits.
- ii) Write informative notes on 8
- i) Gaultheria oil and ii) Taxol.

OR



b) i) Write the chemical nature, a test for identification and uses of

i) Podophyllotoxin and

ii) Guggulsterones.

6

ii) Describe the cellular arrangements in the T.S. of Fennel. Give chemical nature and uses of :

i) Anethole

ii) Eugenol

iii) Capsaicin and

iv) Carvone.

8

IV. a) i) Write a brief note on historical development of plant tissue culture. Discuss the various steps involved in the initiation of callus from an organ explant.

8

ii) What is biotransformation ? Discuss biotransformation of any three secondary metabolites of medicinal plant species.

6

OR

b) i) Discuss the immobilised plant cell culture technology.

10

ii) Write about embryogenesis.

4

V. a) i) State the regulation for labelling, packing and alcohol content in Herbal medicines.

8

ii) Describe the method of preparation with examples, of

6

i) Asawas

ii) Churnas and

iii) Ghristas.

OR

b) i) Write a note on types of herbal formulations.

6

ii) Give an account of drugs discovered from traditional plant medicines.

8



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Code No. : 7021

FACULTY OF TECHNOLOGY

B.Pharm.III Year I Semester (Main) Examination, November 2009

PHARMACOLOGY – I

Time: 3 Hours]

[Max. Marks: 70

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

- (8+1) a) Define receptors. Discuss the mechanism of drug actions through G-protein coupled receptors and Ion channels. (2+6+6)

OR

- b) i) Explain dose effect relationship.

- ii) What are different factors influencing drug action ? (7+7)

2. a) i) What are cholinesterase inhibitors ? Classify and explain their pharmacological actions.

- ii) Design a suitable experimental model to demonstrate the dual action of Acetyl choline. (8+6)

OR

- b) i) Classify skeletal muscle relaxants with examples. Compare and contrast d-TC with succinyl choline.

- ii) Explain the Dale's vasomotor reversal phenomena. (8+6)

3. a) What is hypertension ? Classify drugs used in the treatment of hypertension. Discuss the pharmacological actions, therapeutic uses and adverse effects of calcium channel blockers. (2+4+8)

OR

- b) What is cardiac arrhythmias ? Explain the electrophysiology of cardiac tissue, classify antiarrhythmic agents with examples. Discuss the pharmacological actions and therapeutic uses of quinidine. (2+4+4+4)

4. a) What are different CNS neurotransmitters ? Explain the role of S-HT and Dopamine in CNS. Discuss the mechanism of action and therapeutic uses of Benzodiazepines. (2+6+6)

OR

- b) What are NSAIDS ? Classify them with suitable examples, explain the mechanism of action, pharmacological actions therapeutic uses and adverse effects of salicylates. (2+4+8)

5. a) What are diuretics ? Classify them with suitable examples, explain the mechanism of action, pharmacological actions and therapeutic uses of carbonic anhydrase inhibitors. (6+8).

OR

- b) i) Classify drugs used in treatment of peptic ulcer, explain the mechanism of action and therapeutic uses of Omeprazole.

- ii) Write the mechanism of action, therapeutic uses of Ondansetron and Domperidone. (8+6)



Code No. : 7018

Code No. : 7018

FACULTY OF TECHNOLOGY**B. Pharmacy III Year (I Semester) (Main) Examination, Nov. 2009****PHARMACEUTICAL TECHNOLOGY****(Pharmaceutics – II)**

Time: 3 Hours]

[Max. Marks: 70

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

1. a) What are the various adjuvants used in the pharmaceutical formulations ? Write their importance with suitable examples. 14

OR

- b) Write brief notes on the following : (6+4+4)

- i) Antioxidants
- ii) Preservatives
- iii) Hydrocolloids.

2. a) i) Define suspensions. Differentiate between flocculated and deflocculated suspensions with suitable examples. 7
- ii) Describe the formulation parameters and methods of manufacture of suspensions. 7

OR

- b) i) Explain the term "disperse system". Classify the disperse systems. 4
- ii) Write about the formulation and evaluation of emulsions and a 6
- iii) Note on multiple emulsions. 4

3. a) i) What are tablets ? Describe the different types of tablets and their merits and demerits. 7
- ii) Differentiate between hard gelatin capsules and soft gelatin capsules and write their advantages and disadvantages. 7

OR

- b) Write briefly about :
- Film and enteric coating methods. 6
 - Capping, picking, sticking and mottling. 4
 - Structure and operation of a coating pan. 4
4. a) i) Define 'parenteral'. Classify the different parenterals with examples. 4
- Describe the manufacture of a parenteral injection. 6
 - Evaluation of parenteral injection. 4
- OR
- b) i) Describe briefly about the characteristics of eye drops, eye ointments and suspensions. 7
- Add notes on the special requirements, vehicles and techniques used in the manufacture of eye drops, ointments and suspensions. 7
5. a) i) Define 'aerosol'. Describe the advantages and disadvantages of aerosol dosage form. 6
- What are propellants? Describe their importance in aerosol formulation. Classify them and add a note on environmental considerations. 8
- OR
- b) Write briefly on :
- Rubber as packing material. 4
 - Glasses as packing material. 5
 - Plastics as packing material. 5

12/11/09 A.N.O/C



Code No. : 7017

FACULTY OF TECHNOLOGY

B. Pharm. III-Year I Semester (Main) Examination, November 2009
MEDICINAL CHEMISTRY - I

Time: 3 Hours]

[Max. Marks: 70

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

1. a) i) Describe different prodrug approaches involved in the prolongation of drug activity and masking drug toxicity. 7
ii) How Henderson Hasselbalch equation helps in determining the extent of drug ionization ? What is the pK_a value for 50% ionized drug at blood pH ? 7

OR

- b) i) Write short notes on bioisosterism and factors involved in drug solubility. (5+4)
ii) How does plasma protein bound drug affect biological activity ? Give an appropriate example. 5
2. a) i) Classify anticholinergic drugs with one example each, with structure and chemical name. 5
ii) Give the chemical name and formulate synthetic route for
i) Prazosin ii) Carbachol iii) Mecamylamine. 9

OR

- b) i) Give the structure and MOA of the following drugs :
A) Salbutamol B) Meprobamate C) Atenolol. 9
ii) Write the uses of the following drugs :
A) Baclofen B) Physostigmine
C) Labetolol D) Dantrolene
E) Dicyclomine. 5
3. a) i) Identify the following drug and give its structure and name :
A) Dihydropyridine derivative with antiarrhythmic action
B) Steroidal compound with positive inotropic action
C) Nitrite with vasodilator action
D) Imidazole derivative with antihypertensive action. 8

- ii) Write a short note on HMG-CoA reductase inhibitors giving a couple of examples.

6

OR

- b) i) Formulate the synthesis and give the metabolism of

i) Nifedipine ii) Clofibrate iii) Verapamil.

9

- ii) Give the stereochemical parameters of cardiac glycosides.

5

4. a) i) Write a short note on immunomodulator drugs.

6

- ii) Give the synthesis and uses of

i) Furosemide ii) Tolbutamide.

8

OR

- b) i) Give the structure, name and adverse effects of

A) Amrinone B) Hydrochlorothiazide C) Propylthiouracil

9

- ii) Write a note on insulin.

5

5. a) i) Give the SAR of any two classes of H_1 -antihistaminics.

6

- ii) Formulate the synthesis and give the uses of

i) Omeprazole ii) Citrizine.

8

OR

- b) i) Give the clinical significance and adverse effects of anticoagulant agents.

6

- ii) Give the synthesis of :

i) Diphenhydramine HCl ii) Warfarin sodium.

8

FACULTY OF TECHNOLOGY

B. Pharm. III Year I Semester (Main) Examination, November 2009

PHYSICAL PHARMACY - I

Time: 3 Hours]

[Max. Marks: 70

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

1. a) i) Explain the postulates of the kinetic molecular theory. 5
 ii) What is X-ray diffraction and how is it used in the pharmaceutical field ? 5
 iii) State and explain Gibb's phase rule. 4
 OR
 b) i) Explain any two methods of achieving liquefaction. 5
 ii) What is the effect of intermolecular forces on the melting point of a solid ? 5
 iii) Explain the phase diagram of a two component system. 4
2. a) i) State and explain the law of conservation of energy and give the meaning of energy balance. 5
 ii) Define standard state heats of formation and combustion and explain Hess's law of heat summation. 5
 iii) Define entropy, free energy and Gibb's free energy. 4
 OR
 b) i) Define and explain internal energy and enthalpy. 5
 ii) State and explain the second law of thermodynamics. 5
 iii) A steam engine operates between the temperatures of 353° and 268°k. What is the theoretical efficiency of the engine ? 4
3. a) i) Differentiate between ideal and real solutions. 5
 ii) Discuss the modern theory of strong electrolytes. 5
 iii) What is Sorensen's pH scale ? 4
 OR
 b) i) What are colligative properties ? How do you determine the depression in freezing point ? 5
 ii) Derive an equation for determining hydrogen ion concentration in a weak acid. 5
 iii) A 0.2 m aqueous solution of a drug gave a boiling point elevation of 0.103°C. Calculate the approximate molal elevation constant for the solvent water. 4



Code No. : 7019

4. a) i) Explain the cryoscopic method and the sodium chloride equivalent method of adjusting isotonicity. 5
ii) Explain buffer capacity and give its pharmaceutical significance. 5
iii) What is the maximum buffer capacity of an acetate buffer with a total concentration of 0.020 moles/liter? 4

OR

- b) i) What are pH indicators? 5
ii) What is the pH of a solution containing 0.10 mole of ephedrine and 0.01 mole of ephedrine hydrochloride per liter of solution? The pK_b of ephedrine is 4.64. 5
iii) Write a note on the preparation of pharmaceutical buffers. 4
5. a) i) Give the design and cell equation for any two types of electrodes. 5
ii) How do you operate a pH meter? 5
iii) What are promoters and inhibitors? 4
OR
b) i) Write a note on oxidation-reduction potential. 5
ii) What is an electro chemical cell? 5
iii) Define catalysis and give its significance in the pharmaceutical field. 4