



FACULTY OF PHARMACY
B.Pharmacy II Year II Semester (Supp.) Examination, Oct./Nov. 2012
PHARMACEUTICAL BIOCHEMISTRY

Time: 3 Hours]

[Max. Marks: 70

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

1. a) i) Discuss the construction of cell and transport process across cell membranes. 8
- ii) Define the terms redox potential, free energy and equilibrium constant. 6
- OR
- b) i) List out the energy rich compounds indicating their structures and explain the reasons for including them under the high energy compounds. 8
- ii) Explain the salient features of active transport across the cell membrane. 6
2. a) i) Explain the glycolytic breakdown of glucose, its regulation and energy yield in it. Comment on the substrate level phosphorylation. 8
- ii) Write short notes on glycogenolysis and anaplerotic reactions. 6
- OR
- b) i) Discuss the pentose phosphate cycle and explain the physiological significance of this pathway. 8
- ii) Sketch the glyoxylate cycle and explain its physiological significance. 6
3. a) i) List out the important phospholipids indicating their structures and sketch their biosynthesis. 8
- ii) Outline briefly the biosynthesis of cholesterol. 6
- OR
- b) i) Explain the beta-oxidation theory of long chain fatty acids, its regulation and biological significance. 8
- ii) Write short notes on ketogenesis and fatty acid desaturases. 6



4. a) i) Discuss the biosynthesis of Purine nucleotides and their regulation. 8
ii) Explain the significance of nitrogen balance and transaminases. 6

OR

- b) i) Write an essay on protein biosynthesis and its regulation. 8
ii) Write short notes on mutagens and inborn errors in metabolism. 6

5. a) i) Discuss the importance and principle in the quantitative estimation of urea, creatinine and glucose in blood. 8
ii) Sketch the physiological significance of analysis of ketone bodies and bile salts in urine. 6

OR

- b) i) Discuss the role of c-AMP in enzyme activation, regression and induction with suitable examples. 8
ii) Sketch the clinical significance of quantitative estimation of albumin and albumin-globulin ratio in blood. 6



FACULTY OF PHARMACY

**B. Pharmacy II Year (II – Semester) (Supple.) Examination, Oct./Nov. 2012
PHARMACOGNOSY – I**

Time: 3 Hours]

[Max. Marks: 70

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

1. a) What are growth regulators ? Classify and explain the applications and functions.
b) Give the advantages of cultivation. (10+4)
OR
a) Explain the various steps subsequent to collection of medicinal plants.
b) Write a note on mutation. (9+5)
2. a) Explain the Ohikimic acid pathway.
b) Write about isotope feeding methods. (12+2)
OR
a) Write a note on sequential analysis.
b) Write about techniques used in Biogenetic pathways.
c) List the isotopes used in pharmacy and give their significance. (4+7+3)
3. a) Define the term identity, quality and purity of crude drugs and how it can be maintained.
b) Write a note on effect of moisture content and explain the chemical method of moisture content determination.
c) Give the source and morphological characters of lycopodium spores. (4+6+4)
OR
a) Define and explain the importance of evaluation. Discuss about the physical method of evaluation.
b) Write a note on construction of cameroflucida.
c) What are leaf constant and define. (6+3+5)



4. a) Discuss the chemistry of carbohydrates and describe Isabgol under a suitable pharmacognostic scheme.
- b) Write the identification tests for Agar and Acacia. (10+4)

OR

- a) What are tannins ? Classify and give their chemical nature.
- b) Give the source and uses of chaulmoogra oil, myrobolan and Trayacanth.
- c) Write the differences between Pole and Black catechu. (4+6+4)
5. a) What are proteins and enzymes ? Classify and give specific identification test.
- b) Write the chemical tests for cotton, wool and honey.
- c) Give an account on preparation and processing of Papain. (7+3+4)

OR

- a) Write the source, constituents and uses of :
- i) Musk
 - ii) Shark Liver oil.
- b) Write an informative note on Gelatin and Pancreatin. (6+8)



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FACULTY OF PHARMACY
B. Pharm. II Year II Semester (Suppl.) Examination, Oct./Nov. 2012
PHARMACEUTICAL ENGINEERING – II

Time: 3 Hours]

[Max. Marks: 70

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

1. a) Discuss the principle, construction, working and applications of ball mill with diagram. 10
b) Write a note on Elutriation. 4
- OR
- c) Explain about principle, construction and working of bag filter with diagram. 8
d) What is Liquid-liquid extraction and enlist the problems of crude drug extraction ? (3+3)
2. a) Differentiate between distillation and evaporation. Write a note on Raoult's law and Dalton's law. 4
b) Write about forced circulation evaporator and climbing film evaporator with diagrams. (5+5)
- OR
- c) Write about : 5
i) fractionating columns 5
ii) Equilibrium distillation. 4
d) Write about the principle and construction of centrifugal molecular still. 4
3. a) Write about caking of crystals and its prevention. 4
b) Write about properties and types of tower packing materials in Gas absorption. 4
c) Write a note on Fluidised bed dryer with sketch diagram. 6
- OR
- d) Write the principle, construction and working of a crystallizer that works on the basis of adiabatic evaporative cooling. 6
e) What is bound water, unbound water, EMC and FMC ? 4
f) What is Gas absorption and write the applications of Gas absorption ? 4

(This paper contains 2 pages)



4. a) Write about sigma blade mixer and planetary mixer with diagrams. (4+4)

b) Write about applications of Ion exchange resins. 6

OR

c) Discuss about the different types of mixing devices for liquid-liquid mixing. 8

d) Explain about the classification and characteristics of ion exchange resins with examples. 6

5. a) What are process variables. Give the measurement of two process variables. 10

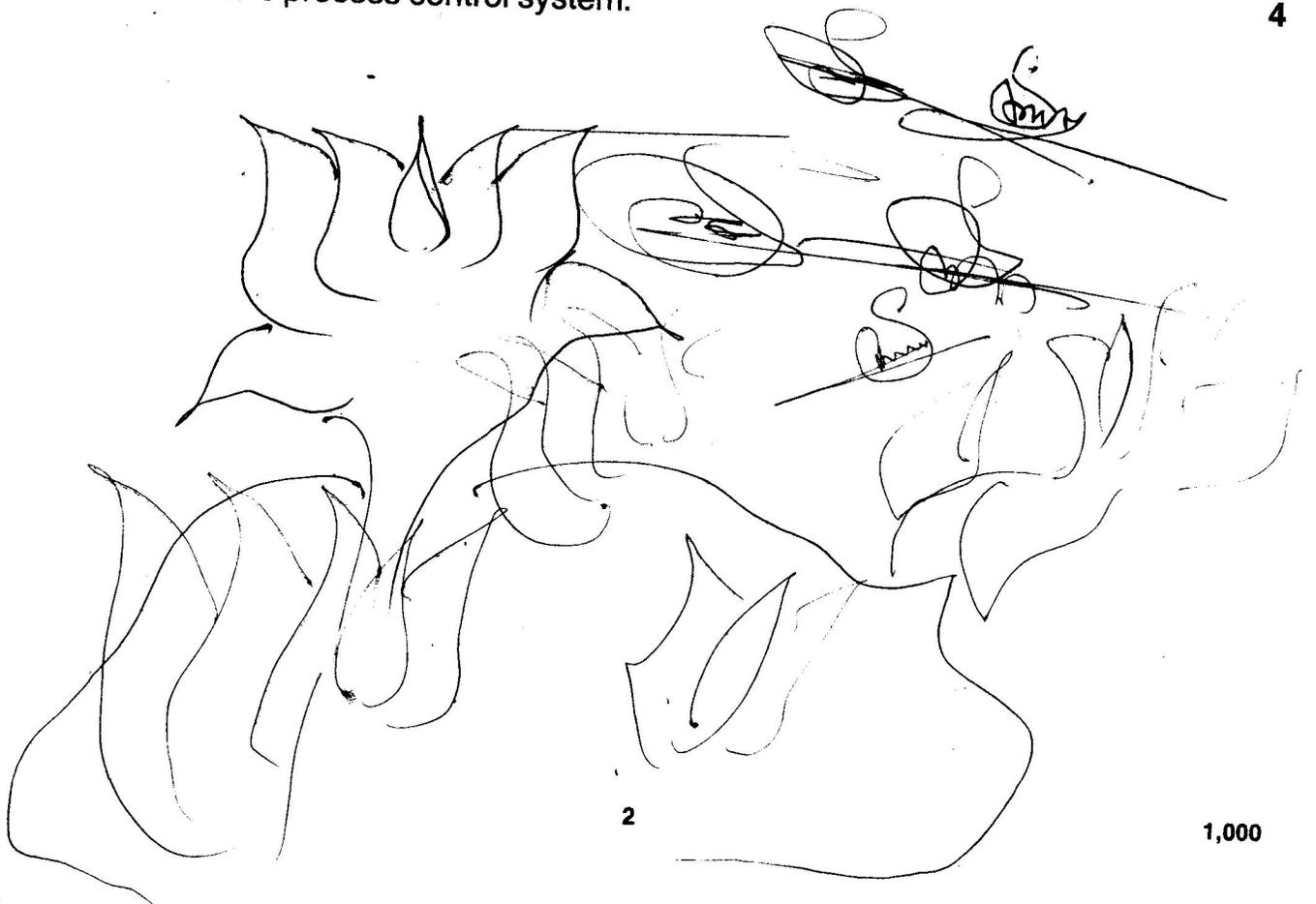
b) Define compaction. Write the scope of compaction. 4

OR

c) Discuss distribution of forces in powder mass. 4

d) What are the factors affecting strength of tablets ? Write about any two. 6

e) Differentiate open loop control system and closed loop control systems in Automatic process control system. 4



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FACULTY OF PHARMACY
B. Pharmacy II Year II Semester (Supple.) Examination, Oct./Nov. 2012
ENVIRONMENTAL STUDIES

Time: 3 Hours]

[Max. Marks: 70

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

1. a) Discuss briefly about mineral and every resources with suitable examples. 8
b) Explain about concepts and characteristic features of ecosystems. 6
OR
c) Write notes on the following :
i) Benefits of natural ecosystems. 4
ii) Structure and functions of ecosystems. 6
iii) Sustainable life styles. 4
2. a) Discuss briefly about medicinal and economic value of Biodiversity. 8
b) Explain about species and genetic diversity. 6
OR
c) Explain the following :
i) Classification of Biodiversity. 5
ii) Levels of Biodiversity. 4
iii) Threats and conservation of Biodiversity. 5
3. a) Explain the following briefly :
i) Climate change and ground water depletion. 6
ii) Hazardous waste and industrial wastes minimization and management practices. 8

OR



- b) Write briefly on the following :
- i) Cost benefit analysis related to any pharma industry. 7
 - ii) Development of value added products from solid wastes. 7
4. a) Explain about the consequences of population growth and population exploitation. 8
- b) Write briefly on industrialization and Green revolution. 6

OR

- c) Write notes on the following : (3.5×4)
- i) Bio terrorism
 - ii) Earth quakes
 - iii) Land slides
 - iv) Tsunami.
5. a) Explain the following :
- i) Environment impact assessment. 5
 - ii) Eco labelling. 4
 - iii) Right to information act. 5

OR

- b) Write briefly on the following :
- i) Regulatory bodies. 4
 - ii) International conventions 6
 - iii) Wild life protection. 4

1047
Code No. : 2662

FACULTY OF PHARMACY
B. Pharmacy II Year (Semester – II) (Supple.)
Examination, Oct./Nov. 2012
PHARMACEUTICAL ORGANIC CHEMISTRY – II

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Time : 3 Hours]

[Max. Marks : 70

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

1. a) i) Write in detail about conformation isomerism with examples. 7
ii) What is racemic modification ? How do you resolve racemic modification. 7

OR

- b) i) What is cis-trans isomerism ? How do you assign configuration to E and Z isomers. 7
ii) Define and explain elements of symmetry. 7

2. a) i) What is electrophilic substitution reactions ? Explain Friedel-Crafts acylation of benzene. 8
ii) How do you explain aromatic character of organic compounds using Huckel's rule. 8

OR

- b) i) Explain at least two chemical reactions of naphthalene and anthracene. 8
ii) Explain the acidity of phenols with examples. How do you convert phenol into salicylaldehyde. 6

3. a) i) Define heterocyclic compounds and explain systematic nomenclature to name heterocyclic compounds with examples. 7
ii) Write the structure and two important methods of preparation of pyrrole and acridine. Also mention names of compounds bearing the above mentioned structures. 7

OR

- b) i) Draw structures of furan and explain electrophilic substitution of furan with examples. 8
ii) Outline two methods of preparation and two important chemical properties of pyridine. 6



Code No. : 2662

4. a) i) Outline different methods of preparation important chemical reactions of Pyrosols. 8
- ii) Draw the structures and uses of compounds containing : 6
- A) Phenam
 - B) Cepham
 - C) Triazine.

OR

- b) i) Draw the structures and two methods of preparation of 6
- A) Oxazole
 - B) Isoazole
 - C) Benzenoidazole.
- ii) Write the ring structure, nomenclature and specific use of compounds bearing : 8
- A) *Cinnoline*
 - B) Oxazine
 - C) Triazole
 - D) Dioxane.

5. a) i) Explain openair oxidation and *Mercapton* pondorf verily reduction and their applications is synthesis. 10
- ii) Mention two important applications of perchloric acid. 4

OR

- b) i) Write the mechanism with examples 8
- A) Beckmann rearrangement
 - B) Hoffman rearrangement.
- ii) Mention the synthetic applications of : 6
- A) LTA
 - B) NBS.

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Code No. : 6513/M

FACULTY OF PHARMACY

**B. Pharmacy II Year II Semester (Main) Examination, April/May 2012
PHARMACEUTICAL BIO-CHEMISTRY**

Time: 3 Hours]

[Max. Marks: 70

Note : Answer all questions.

All questions carry equal marks.

1. a) Write about energy rich compound and reduction potential. 6
- b) Explain the mechanism of passive transport across the cell membrane. 8
- OR
- c) Write about the production of ATP and its significance. 8
- d) Explain the mechanism of Active transport. 6
2. a) Explain the mechanism of action of enzyme and its inhibition. 6
- b) What are co-enzymes ? Give the example and explain their significance. 8
- OR
- c) Write a detailed note on Gluconeogenesis. 6
- d) Describe about TCA cycle and add a note on effect inhibitor and regulation of TCA cycle. 8
3. a) Discuss in detail about biosynthesis of cholesterol and explain its mode of regulation. 8
- b) Write a note on the following : 6
- i) Phospholipids
- ii) Sphingolipids.
- OR
- c) Write a short note on Beta oxidation. 6
- d) Sketch the biosynthesis of unsaturated fatty acid and explain it. 8





4. a) Write about Biosynthesis of DNA. 6
b) Discuss the biosynthesis of Purines. 8
- OR
- c) Explain mechanism of protein synthesis and its regulation. 6
d) Write about the application of RDNA technology. 8
5. a) Write the principle involved in quantitative estimation of glucose, urea and creatinine in blood. 6
b) What is regression, induction and control of enzyme synthesis by regulation of transcription ? 8
- OR
- c) Write the principle involved in the quantitative estimation of bile pigments and albumin in urine. 6
d) Explain the physiological significance of product inhibition and feed back inhibition. 8
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5/5/2012 F.V.C.K.

Code No. : 6515/M

FACULTY OF PHARMACY
B.Pharmacy II Year II Semester (Main) Examination, April/May 2012
PHARMACOGNOSY – I

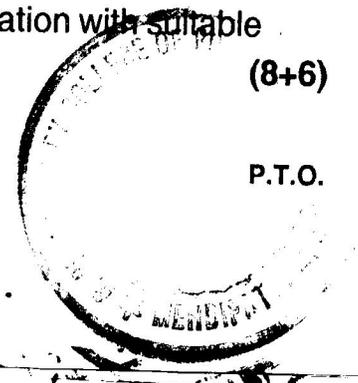
Time: 3 Hours]

[Max. Marks: 70

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

1. a) i) What are crude drugs ? Discuss the various methods of classification of crude drugs with suitable examples.
ii) Explain how mutation is helpful in medicinal plants. (10+4)
- OR
- b) i) Write the various factors involved in the cultivation of medicinal plants. Write in detail any two of them with suitable example.
ii) Write note on storage of crude drug. (10+4)
2. a) i) Write the basic metabolic pathways and discuss the Shikimic acid pathway and explain the role of it in the Biogenesis of different secondary metabolites.
ii) Explain about the sequential analysis. (10+4)
- OR
- b) i) Describe the isoprenoid biosynthesis and competitive feeding techniques.
ii) What are primary and secondary metabolites of pharmaceutical importance. (10+4)
3. a) i) Enumerate various environmental and biological factors and agents which cause drug deterioration ?
ii) Discuss various types of adulterations occurs in crude drugs. (8+6)
- OR
- b) i) Discuss quality control of crude drugs.
ii) Write the importance of chemical and microscopic evaluation with suitable examples. (8+6)

(This paper contains 2 pages)



4. a) i) What are tannins ? Classify them with suitable examples.
ii) Write the systematic pharmacognostic study of Myrobalan. (6+8)

OR

- b) i) Write the biological source and method of preparation, chemical constituents and uses of Agar-agar.
ii) Give the source, chemistry and uses of starch. (8+6)
5. a) i) Discuss the method of preparation, chemical constituent (structure), test and uses of Shark liver oil.
ii) Write the source and method of preparation of cotton. (10+4)

OR

- b) i) Write the biological source, chemical constituent and uses of following crude drug :
A) Musk
B) Codliver oil
C) Cantharides
D) Silk.
ii) Write a note on Gelatin. (10+4)

2/5/2012 - F.N.O/C

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FACULTY OF PHARMACY

B. Pharmacy II Year II Semester (Main) Examination, April/May 2012

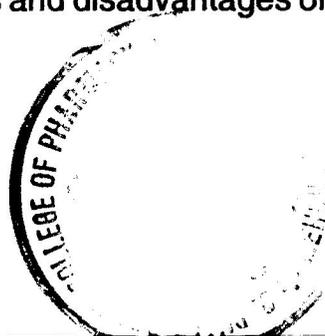
PHARMACEUTICAL ENGINEERING – II

Time: 3 Hours]

[Max. Marks: 70

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

1. a) i) Write the importance of particle size in Pharmacy. 4
ii) Write the procedure for the determination of particle size of powder and its size distribution using sieves. 10
OR
b) i) Classify size reduction equipment. 3
ii) Explain the laws applicable to size reduction. 4
iii) Write the construction and working of Hammer mill. 7
2. a) i) What is free mean path and its importance in molecular distillation. 4
ii) Explain the construction and working of centrifugal molecular still with the help of neat diagram. 10
OR
b) i) Describe the different factors that affect the rate of evaporation. 5
ii) Write the construction and working of climbing film evaporator. 9
3. a) i) Explain different stages in drying rate curve. 6
ii) Explain principles involved in freeze drying and describe working of freeze dryer with the help of diagram. 8
OR
b) i) Explain Mier's super saturation theory. 5
ii) Explain construction, working, advantages and disadvantages of Krystal crystallizer. 9



4. a) i) Explain different types of ion exchange resins along with their applications in pharmacy. 8
ii) Explain the working of ointment mill with the help of neat diagram. 6
OR
- b) i) Explain objectives of mixing. 4
ii) What is mixing index ? 4
iii) Explain different types of impellers along with their characteristics. 6
5. a) What is compaction ? What are the different forces involved in compaction and how do you measure them ? 14
OR
- b) What is automatic process control and explain the measurement techniques for the process variable, temperature. 14



8/3/12 F.v. O/C

Code No. : 6516/M

FACULTY OF PHARMACY
B.Pharmacy II Year II Semester (Main) Examination, April/May 2012
ENVIRONMENTAL STUDIES

Time: 3 Hours]

[Max. Marks: 70

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

1. a) i) Mention about resources of forest. 4
ii) Explain the role of an individual in conservation of natural resources. 10
OR
- b) i) Explain food chain. 4
ii) Describe the various ecological pyramids. 10
2. a) i) Explain ecosystem diversity. 6
ii) Discuss the distribution of biodiversity. 8
OR
- b) i) Write about hot spots of India. 4
ii) Explain endangered and endemic species of India. 10
3. a) i) Define primary and secondary pollutants. 4
ii) Discuss soil pollution and mention its effects on ground water quality. 10
OR
- b) i) Explain the effects of acid rain on vegetation. 4
ii) What are the green house gases and explain the causes and consequences of global warming. 10
4. a) i) What are the impacts of green revolution ? 4
ii) Explain the effect of population growth and population explosion on environment. 10
OR
- b) i) Write about rain water harvesting. 4
ii) Discuss the natural disasters and its management. 10
5. a) i) Explain right to Information Act. 4
ii) Discuss the salient features of the air (prevention and control of pollution) Act. 10
OR
- b) i) Write about eco-audit. 4
ii) Explain the various methodologies involved in EIA. 10



25/4/12 F.M.O/C



Code No. : 6512/M



FACULTY OF PHARMACY
B. Pharmacy II Year II Semester (Main) Examination, April/May 2012
PHARMACEUTICAL ORGANIC CHEMISTRY – II

Time: 3 Hours]

[Max. Marks: 70

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

1. a) i) What is aromaticity ? Explain the Huckels rule. 8
ii) Write the oxidation and reduction reactions of Anthracene. 6

OR
- b) i) Explain the effect of substituent on reactivity and orientation of mono substituted benzenes. 8
ii) Write the mechanism of nucleophilic substitution in halobenzenes. 6
2. a) i) Distinguish between enantiomer and diastereomer. 4
ii) Explain sequence rules to determine R and S configuration. 6
iii) Write a note on cis-trans isomerism. 4

OR
- b) i) Explain about E and Z isomers with rules for nomenclature. 8
ii) Define Chirality, Asymmetry and Enantiomer. 6
3. a) i) Discuss the electrophilic substitution reactions of pyridine. 8
ii) Write skraup synthesis of quinoline. 6

OR
- b) i) Compare the aromaticity of pyrrole, thiophen and furan. 6
ii) Write the any one method of preparation and reactions of indole. 8
4. a) i) Discuss any two methods of preparation of imidazole and thiazole. 10
ii) Write the ring structure and nomenclature of following heterocyclic compounds : 4
A) Cinnoline B) Benzopyran
C) Dioxane D) Tetrazole.

OR



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- b) i) Discuss any two methods of preparation of oxazole. 8
- ii) Write the structure and system of numbering of the following heterocyclics with two examples of medically important compounds. 6
- A) Benzofuran
- B) Phenazine
- C) Triazole
5. a) i) Write two applications of each of the following : 6
- A) Sodium periodate
- B) N-Bromosuccinimide.
- ii) Describe the mechanism of following reactions : 8
- A) Beckmann re-arrangement
- B) Fries migration.
- OR
- b) i) Write the two applications of each of the following : 6
- A) Lead tetra acetate
- B) Selenium oxide
- ii) Describe the mechanism of following reactions : 8
- A) MPV reduction
- B) Oppenauer oxidation.