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Code No. : 2659

FACULTY OF PHARMACY
B.Pharm (Hons) (Semester – I) (Main) Examination, Oct./Nov. 2012
PHARMACEUTICAL ANALYSIS – I
(Chemical Analysis)

Time : 3 Hours]

[Max. Marks : 70

Note : Answer all questions.

All questions carry equal marks.

1. a) i) Define primary standard and secondary standard with examples. Write the ideal properties of a primary standard substance. 6
- ii) Define the terms : (4×2=8 Marks)
- A) Accuracy
B) Precision
C) Specificity
D) Linearity.
- OR
- b) i) Write a note on different methods of expressing the concentration of solutions. 6
- ii) Explain the calibration of volumetric flask. 4
- iii) Calculate the weight of NaOH in 1N solution, required to neutralise 25 ml of 1 N H₂SO₄. 4
2. a) i) Write a note on common ion effect. 6
- ii) What are buffers ? How buffers are prepared ? Explain their mechanism of action. 8
- OR
- b) i) Write about the preparation and standardization of 0.1N NaOH solution. 4
- ii) Explain Bronstead Lowry and Lewis theories of acids and bases. 6
- iii) Solubility product of Mg(OH)₂ is $3.4 \times 10^{-11} \text{ mol}^3/\text{L}^3$. Calculate its solubility in g/L. 4



3. a) i) Write a note on Redox indicators. 5
ii) Explain the principles of Gravimetric Analysis and mention its applications. 5
iii) How do you prepare and standardize 0.1N KMnO_4 ? 4
OR
- b) i) Write short notes on precipitation and co-precipitation methods used in Gravimetric Analysis. 8
ii) Calculate the normality of 2M KMnO_4 . 3
iii) Write a note on self indicators. 3
4. a) i) Explain the masking and demasking agents with suitable examples. 7
ii) Discuss the principle, procedure and apparatus used in the assay of oxygen. 7
OR
- b) i) How do you prepare and standardize 0.1 N HClO_4 . 4
ii) Explain Iodometry and Iodimetry. 6
iii) Write the principle involved in complexometric titrations. 4
5. a) i) Define the terms with suitable examples : (3×2=6 Marks)
A) Molecular weight
B) Empirical formula
C) Percentage yield.
- ii) Calculate the percentage composition of elements in Na_2CO_3 . 4
iii) Write the mass balance equation for the following : (2×2=4 Marks)
A) $\text{Ba}(\text{OH})_2 + \text{NaCl} \rightarrow \text{BaCl}_2 + \text{NaOH}$
B) $\text{CaCl}_2 + \text{NaNO}_3 \rightarrow \text{Ca}(\text{NO}_3)_2 + \text{NaCl}$
- OR
- b) i) How many moles of Na_2CO_3 are present in 26.5 gm of sodium carbonate. 4
ii) Describe the mole concept and Avogadro number. 5
iii) Chemical analysis of a carbon compound gave 10.06% carbon, 0.84% Hydrogen and 89.10% Chlorine. Calculate the empirical formula of the compound. 5

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Code No. : 2661



FACULTY OF PHARMACY

II Year I Semester (Main) Examination, Oct./Nov. 2012

COMMUNICATIVE ENGLISH

Time : 3 Hours]

[Max. Marks : 70

Instructions : Answer *all* questions.

All questions carry **equal** marks.

PART – A

(4×5=20 Marks)

1. a) What are the various types of barriers to communication ? How can these be removed ?

OR

- b) Explain the role and importance of communication.

2. a) "Selection of medium is the most essential concept in effective communication" – Discuss.

OR

- b) "Preparation and presentation are the two essential ingredients of making a speech" – Explain.

3. a) Write a short notes on British English.

OR

- b) What is the use of Thesaurus ?

4. a) What is memorandum ? Explain its features and importance with the help of a Model Memo.

OR

- b) As the Librarian of your organization write a letter claiming compensation for 39 books, which arrived in a damaged condition.

PART – B

(4×5=20 Marks)

1. Rewrite the correct answers of the following :

- 1) I know the most easiest way to solve this problem.
2) Never I have seen such a huge library.



- 3) I have gone out yesterday ?
 - 4) I congratulated him for his promotion.
 - 5) No one likes his proudness.
2. Give the synonym for the following :
- 1) Legacy
 - 2) Aspiration
 - 3) Incessantly
 - 4) Ingenious
 - 5) Enormous
3. Explain the following one word substitutes in **one** or **two** sentences :
- 1) Hayrick
 - 2) Irresistible
 - 3) Drudge
 - 4) Inconceivable
 - 5) Seamstress.
4. Rewrite the following sentences as directed :
- 1) I have been ill _____ a week.
(Use appropriate preposition)
 - 2) Ganges is considered sacred river by many.
(Insert appropriate article)
 - 3) The manager said "Where is your application".
(Change into indirect speech)
 - 4) The machine wraps the bread automatically.
(Change into passive voice)
 - 5) I _____ (work) on the report since eight 'O' clock.
(Use the correct form of verb)



PART – C

(5x6=30 Marks)

1. a) Why do some boys turn their irritation towards their mothers ?

OR

b) What does the author think about rebelliousness in adolescents ?

2. a) Why was Carnegie a huge success as steel king ?

OR

b) What made Carnegie's life always full and interesting ?

3. a) What is the meaning of "Civilised" according to CEM Joad in our own civilization ?

OR

b) How does CEM Joad praise our civilization ?

4. a) "The secret of work is a remarkable exposition of non-attachment to action."
Explain.

OR

b) According to Swami Vivekananda, when will misery come to an end ?

5. a) "Drafting a report is a Scientific and Systematic process". Explain.

OR

b) Write a letter of application for the post of computer programmer in Techno
Soft Pvt. Ltd, Anna Marg, Chennai.



Code No. : 2658

FACULTY OF PHARMACY
B.Pharmacy II Year I Semester (Main) Examination, Oct./Nov. 2012
PHARMACEUTICAL ENGINEERING - I

Time: 3 Hours]

[Max. Marks: 70

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

1. a) i) Define unit operation and unit process with examples. 4
ii) Define corrosion and explain the theories of corrosion. 7
iii) Write about the merits and demerits of cast iron as a material of plant construction. 3
OR
- b) i) Write about various types of alloys of stainless steel along with their composition, merits and demerits. 6
ii) Write about dimensionless equation with example. 3
iii) Classify corrosions and explain any two methods for combating corrosion. 5
2. a) i) What are the various types of energy losses in fluid flow ? 4
ii) Differentiate the black body and grey body. State Stefan's Boltzmann law. 4
iii) State Fourier's law and derive an equation for heat transfer through a metal wall. 6
OR
- b) i) Explain the construction, working, merits and demerits of vacuum pump. 6
ii) Define surface and overall coefficients. 2
iii) Write about the construction, working advantages and disadvantages of single pass tubular heater. 6
3. a) i) Define conveying and explain about principle, construction, working, merits and demerits of Belt conveyors. 8
ii) Classify centrifugal pumps and give the construction and working of turbine pumps. 6
OR
- b) i) Write about the principle, working, construction and advantages of Penumatic conveyors. 9
ii) Write short notes on globe valve. 5



4. a) i) Define the following : 4
a) Humidity
b) Dewpoint
c) Humid heat
d) Enthalpy.
ii) Explain about the mechanism of dehumidification. 6
iii) Write about the applications of air conditioning. 4

OR

- b) i) Explain the humidity chart with its applications. 9
ii) Write about the approaches for achieving air conditioning. 5
5. a) i) Explain the theory of filtration. 6
ii) Classify the centrifuges and explain in detail about perforated basket centrifuge. 8

OR

- b) i) Write the theory involved in centrifugation with its applications in Pharmacy. 7
ii) Explain the construction, working and advantages of rotary drum filters. 7
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FACULTY OF PHARMACY
Year I Semester (Main) Examination, Oct./Nov. 2012
PHARMACEUTICAL MICROBIOLOGY

Time: 3 Hours]

[Max. Marks: 70

Note : Answer all questions.

All questions carry equal marks.

1. a) Describe the nutritional requirement for the efficient growth of microorganism. 8
b) Differentiate between virus and bacteria. 6

OR

- a) Discuss the modes of identification of bacterial strains from culture characteristics. 8
b) Distinguish between autotrophs and heterotrophs. 6
2. a) Explain the process of physical and chemical mutagenesis. 9
b) Write a note on Ziehl Neelson's staining and its significance. 5

OR

- a) Describe with the help of a flow diagram the a sexual reproduction of protozoa. 8
b) Differentiate between phenotypic and genotypic changes. 6
3. a) Give a detailed account of the equipment and process employed for moist heat sterilization. 9
b) Briefly explain the terms : 5
a) Thermal death time
b) Decimal reduction time.

OR

- a) Classify chemical antimicrobial agents. Add a detailed note on phenol co-efficient technique. 9
b) Use of aldehydes to control microbial contamination. 5



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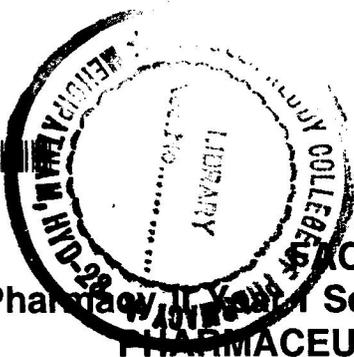
4. a) What is immunity ? Discuss about cellular immunity. 8
b) Distinguish between exotoxin, endotoxin and toxoids. 6

OR

- a) Explain the process of formation of T and B cells. 9
b) Write a brief account of IgG antibodies. 5
5. a) Give a detailed account of the sexual life cycle of the malarial parasite. 8
b) Write a note on the importance of strepto myces species. 6

OR

- a) Explain the general modes of transmission of diseases. What is the causative organisms and symptoms of typhoid ? 8
b) Add a note on microbial tests carried out on potable water. 6
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Code No. : **2657**

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

Time: 3 Hours]

[Max. Marks: 70

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

1. a) i) Write the different types of covalent bond. 5
ii) Give a note on polarity of molecules. 5
iii) Describe the isomerism exhibited by maleic acid and fumaric acid. 4

OR

- b) Explain the following terms with suitable examples : (4×3.5 = 14 Marks)
i) Chiral molecules
ii) Inductive effect
iii) Resonance
iv) Optical isomerism.

2. a) i) Write a note on stability of conjugated alkadienes. 8
ii) Give any four methods of preparation of cycloalkanes. 6

OR

- b) Write the synthesis of the following compounds. 7
i) n-butane
ii) 1, 3-butadiene.

- c) Write about the mechanism of anti Markonikov's addition. 7

3. a) i) What is Saytzeff rule ? Give an example. 2
ii) Write a note on Walden inversion. 5
iii) Write any four methods to synthesize n-propyl bromide. 7

OR

- b) i) How will you distinguish between primary, secondary and tertiary alcohols ? 8
ii) Write the mechanisms of dehydration of alcohols. 6





4. a) i) Write any three methods to synthesize ketones. 7
ii) Explain in detail the acidity of carboxylic acids with examples. 7

OR

- b) i) How will you synthesize the following compounds? (4×2=8 Marks)
A) Malonic ester
B) Propionic acid
C) Ethyl acetate
D) Acetaldehyde.
- ii) Write the reactivity and synthetic uses of ethyl acetoacetate. 6
5. a) i) Write a note on diazotisation and Sandmeyer reaction. 6
ii) Explain about Hinsberg's method of separation of amines. 3
iii) Write any three chemical reactions of aryl diazonium salts. 5

OR

- b) i) Discuss any five chemical reactions of amines. 7
ii) Give any three methods to synthesize amines. 4
iii) Write two methods for synthesis of nitroalkanes. 3



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Code No. : 6509/S

FACULTY OF PHARMACY

**B. Pharmacy II Year I Semester (Suppl.) Examination, April/May 2012
PHARMACEUTICAL ANALYSIS – I (Chemical Analysis)**

Time: 3 Hours]

[Max. Marks: 70

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

1. a) i) Define the concept of error. Explain about various sources of errors and their rectification. (2+4+4)

ii) Write a note on rejection of doubtful values. 4

OR

b) i) What is calibration ? How do you calibrate burettes pipettes and volumetric flasks ? (2+4+4+4)

2. a) i) Explain the terms acidimetry and alkalimetry with suitable examples. 4

ii) Derive equations to calculate the pH value of aqueous solutions of salts obtained from weak acid and strong base. (5+5)

OR

b) i) Explain about different theories of acid and base. 6

ii) Write notes on solubility product and common ion effect. (4+4)

3. a) i) Describe various steps involved in gravimetric analysis. 10

ii) Write a note on adsorption indicators. 4

OR

b) i) What is redox potential ? Explain the principle involved in permanganometric titration. 8

ii) Define the terms iodimetry and iodometry. How do you prepare and standardize 0.1 N. Iodine solution. (2+4)





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4. a) i) How do you prepare and standardize 0.1 N perchloric acid ? (4+4)
ii) Write a note on masking and demasking agents. 6

OR

- b) i) Explain about various methods of complexometric titrations. 7
ii) Explain the theory and applications of non-aqueous titration. 7
5. a) Define the terms molarity and normality. How do you prepare 1000 ml each of 0.1 N NaOH, 0.1N H₂SO₄, 0.1 NI₂ and 0.1N EDTA ? (2+3+3+3)

OR

- b) i) Define the terms empirical formula and molecular formula with examples. 4
ii) Write the balanced chemical reactions for the following :
i) Reaction between sodiumnitrate and sulphuric acid
ii) Reaction between sodium thiosulphate and iodine
iii) Reaction between zinc chloride and EDTA. (2×3=6 marks)
- iii) Calculate the volume of water required to prepare 15% phosphoric acid from 80% phosphoric acid. 4

B. Pharmacy II-Year I – Semester (Supplementary) Examination, April / May 2012

Subject : Pharmaceutical Engineering - I

Time : 3 Hours

Max. Marks : 70

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

- 1.(a) Discuss the applications, advantages and limitations of different kinds of plastics in pharmaceutical industry. (10)
- (b) Describe briefly the different methods used for combating corrosion. (4)

OR

- (c) Explain briefly the theories of corrosion. (4)
 - (b) Describe the important properties and uses of aluminium as material of plant construction. (8)
 - (e) What are Dimensionless Equations? Give one example for it. (2)
- 2.(a) Derive an equation for measurement of pressure difference using differential manometer. (6)
 - (b) Write a note on steam traps. (8)

OR

- (c) Compare orifice meter with venturimeter. (4)
- (d) State and explain Fourier's law of heat transmission with an equation. (6)
- (e) Write a note on condensers. (4)

- 3.(a) Explain the principle, construction and working of screw conveyor with neat diagram. (7)
- (b) Write a note on equipments used for gas handling. (7)

OR

- (c) Describe the construction, working merits and demerits of double action reciprocating pump. (7)
- (d) Write a note on : (4+3)
- (i) Valves
- (ii) Pneumatic conveyor

- 4.(a) With a neat sketch explain the principle working and operation of an absorption refrigeration cycle. (7)
- (b) Describe the different methods available for determination of Humidity. (7)

OR

- (c) Explain with a neat sketch the theory of air conditioning and air conditioner. (8)
- (d) Explain the importance of refrigeration in pharmacy. Add a note on desirable properties of an ideal refrigerant. (6)

- 5.(a) Classify filters and give one example for each type. write the principle, construction and working of metafilters. (7)
- (b) Suggest a suitable equipment for separation of immiscible liquids. Write principle, construction and working of that equipment. (7)

OR

- (c) Write the principle, construction and working of leaf filters. (7)
- (d) Write Kozeny's equation for filtration explaining the symbols used. Write its limitations. (7)



3/5/12 A. N. O/C

Code No. : 6510/S

FACULTY OF PHARMACY
B. Pharmacy II Year I Semester (Suppl.) Examination, April/May 2012
PHARMACEUTICAL MICROBIOLOGY

Time: 3 Hours]

[Max. Marks: 70

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

1. a) i) Describe the different techniques used for preservation of pure cultures. 10
ii) Write about synchronous growth and continuous growth. 4
- OR
- b) i) Describe the different techniques used for determination of viable and total counts of bacteria. 8
ii) Describe the bacterial growth curve. 6
2. a) i) Discuss about morphological features of viruses and cultivation of viruses. 10
ii) Describe the 'Catalase production' test in identification of organisms. 4
- OR
- b) i) Describe the morphology and reproduction in molds. 8
ii) Describe the different types of mutations and mutagens. 6
3. a) i) Define sterilization. Enlist different methods of sterilization and describe about 'Hot air oven' with a neat labelled diagram. 10
ii) Write about sterilization by filtration. 4
- OR
- b) i) Explain the mode of action and practical application of the following :
i) Phenolic compounds 8
ii) Heavy metals. 6
ii) Write about sterilization radiation. 6
4. a) i) Define immunity and describe various types of immunity with suitable examples. 8
ii) Write a note on immunoglobulins. 6

OR

(This paper contains 2 pages)

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Code No. : 6510/S

- b) i) Discuss about different antigen-antibody reactions and their applications. 10
ii) Write a note on bacterial exotoxins and endotoxins. 4
5. a) i) Write about source, mode of transmission, diagnosis and treatment of the following : 8
i) Typhoid
ii) Tuberculosis.
- ii) Describe the systematic study of E. Coli. 6
- OR
- b) i) Write about source, mode of transmission, diagnosis and treatment of the following : 8
i) Cholera ii) Malaria.
- ii) Describe the systematic study of penicillium species. 6
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23/4/12 A.N.O/C

Code No. : 6507/S

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

Time: 3 Hours]

[Max. Marks: 70

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

1. a) Explain the following terms with examples. (4×3.5=14)
- i) Hydrogen bonding
 - ii) Electromeric effect
 - iii) Chirality
 - iv) Hybridization.
- OR
- b) i) How do you differentiate between enantiomers and diastereomers with suitable examples? 5
- ii) What is activation energy? Explain the energy diagram of reactants and products during reaction. (1+8)
2. a) i) Discuss the free radical mechanism for the chlorination of methane. 5
- ii) Write the structural formula of following : 4
- 1) 1, 2-dibromo-2-methyl propane
 - 2) 3-ethyl-2-methyl pentane
 - 3) 4-ethyl-2, 4-dimethyl heptane
 - 4) 2, 2-dimethyl butane.
- iii) Write any three methods of preparation of alkanes. 5
- OR
- b) i) Explain the stability of cycloalkanes by different theories. 10
- ii) Write any two chemical reactions of alkanes. 4
3. a) i) What are the nucleophiles? Give with examples. 3
- ii) Explain the mechanism of S_N^2 reactions. 5
- iii) Discuss the properties of ether and write about Williamson's synthesis. 6

OR



- b) i) How will you distinguish between primary, secondary and tertiary alcohols with different chemical reagents ? 8
ii) Write a note on hydrogen bonding in alcohols. 6
4. a) i) How will you distinguish between a ketone and an aldehyde with chemical reactions ? 5
ii) Give the mechanisms for following : (3x3)
1) Aldol condensation
2) Pinacol-pinacolone rearrangement
3) Halogenation of aldehydes.

OR

- b) i) Give the reasons for following statements : (3x2)
i) Bromo acetic acid is weaker than chloro acetic acid.
ii) Formic acid is stronger than acetic acid.
iii) Monochloro acetic acid is stronger than acetic acid.
- ii) Discuss the mechanism of esterification of carboxylic acids. 3
iii) Write any three methods for preparation of carboxylic acids. 5
5. a) i) Write any four methods to synthesize secondary amines. 6
ii) How to separate mixtures of amines by different methods ? 8

OR

- b) i) Write a note on basicity of amines with examples. 5
ii) Give the mechanism for following reactions : (3x3=9 Marks)
1) Sandmeyer reaction
2) Coupling reaction
3) Gattermann reaction.