

21/11/09 AN - o/c



Code No. : 7009

FACULTY OF TECHNOLOGY
B.Pharm. II Year I – Semester (Main) Examination, November 2009
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 terms :

- A) Accuracy
- B) Specificity
- C) Sensitivity
- D) Standard deviation.

4

ii) There are two analysts I and II who determine the percentage of silver in the same coin. The standard value for silver in that coin is 100%, whereas the two analysts obtained the following results :

Analyst I : 100.00, 99.60, 99.70 99.10

Analyst II : 98.80, 98.82, 98.84 98.82

- A) Calculate the absolute and relative errors of analysts I and II.
- B) What can you say about the work of two analysts ?

5

iii) What is meant by calibration and how do you calibrate burette ?

5

OR

b) i) Calculate the molarity of the following solutions :

A) 4 grams of pure sodium hydroxide in 100 ml of solution

B) 2.65 grams of pure sodium carbonate in 400 ml of solution.

(3+3)

ii) What is a secondary standard ? Explain briefly giving examples.

2

iii) Define and explain :

- A) Indeterminate error
- B) Additive error
- C) Q-test.

(3×2=6 Marks)



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2. a) i) Calculate pH of 0.05 M solution of sodium acetate. (The dissociation constant of Acetic acid is 1.8×10^{-5}). 4
- ii) Write a note on : (3+3+4)
- A) Solubility product
 - B) Law of mass action
 - C) Neutralization curves.

OR

- b) i) Write briefly how 0.1 N Hydrochloric acid is prepared and standardised. 4
- ii) What is common ion effect ? Discuss its importance in pharmaceutical analysis. 4
- iii) Explain Bronsted-Lowry theory and Lewis theory of acids and bases. 6
3. a) i) Discuss briefly the conditions to be observed during precipitation in gravimetric analysis. 6
- ii) How do you prepare and standardise the following solutions ? 8
- i) 0.1 M KMnO_4
 - ii) 0.1 M sodium thiosulphate.

OR

- b) i) Write notes on the following : (4+4)
- A) Co-precipitation
 - B) Digestion of precipitates.
- ii) Explain Mohr's method for determination of Chlorides. 6
4. a) i) How will you prepare and standardise the following solutions ? (3+3)
- A) 0.01 M EDTA solution
 - B) 0.1 N Ceric Ammonium Sulphate.
- ii) How do you determine hardness of water by complexometry ? 4
- iii) Write a note on adsorbents used in gas analysis. 4

OR

- b) i) Discuss the principle, procedure and apparatus used in the assay of Nitrous Oxide. 6
- ii) Write principle and procedure involved in : (4+4)
- A) Assay of Ferrous sulphate
 - B) Standardisation of 0.1 N Perchloric acid.

5. a) i) What mass of silver nitrate is needed to convert 2.33 g of sodium carbonate to silver carbonate ($\text{Ag} = 108$) ? 4
- ii) Treatment of 0.4 g sample of impure KCl with an excess of silver nitrate resulted in the formation of 0.7332 g of silver chloride. Calculate the percentage of KCl in the sample. 5
- iii) How will you balance the following equation by applying ion-electron method ? 5
- $$\text{FeCl}_3 + \text{SnCl}_2 \rightarrow \text{FeCl}_2 + \text{SnCl}_4$$

OR

- b) i) Find the volume to which 50 ml of 2N HCl must be diluted to convert it into 0.3 N solution. 2
- ii) What volume of water should be added to 50 ml of 37% hydrochloric acid (spe. gravity 1.14) to give 1 N solution ? 4
- iii) How many moles of sodium carbonate are contained in 2g of sodium carbonate ? ($\text{Na} = 23$, $\text{O} = 16$, $\text{C} = 12$). 3
- iv) An excess of Barium chloride solution was added to 25 ml of a solution of sodium sulphate. The precipitated barium sulphate weighed 0.864 g. What is the molarity of the sodium sulphate solution ? 5
- ($\text{Cl} = 35.5$, $\text{Ba} = 137$, $\text{S} = 32$, $\text{Na} = 23$)

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

Time: 3 Hours]

[Max. Marks: 70

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

1. a) Write short notes on the following :

- i) The importance of listening in verbal communication
- ii) The use of body language in group discussion
- iii) Ways of expressing apologies.

OR

- b) i) The importance of Non-verbal communication
- ii) The use of synonyms and antonyms in English
- iii) The stages in preparing for a paper presentation.

2. a) i) Write a letter to your friend in UK enquiring about job opportunities for B. Pharm. graduates.

ii) Write a letter of application for the post of area sales manager in a reputed local pharmaceutical firm.

OR

b) i) Write a letter to your father about your recent visit to an Industrial unit in Mumbai.

ii) Draft a letter of application with a copy of your resume for the post of marketing executive in a local medical firm.

3. a) i) Write an essay on the benefits of modern technology.

ii) Rewrite the following sentences as directed.

A) She is the best artist, isn't ?

(Correct the question tag)

B) He _____ (walk) every morning in the park.

(Use the correct form of the verb)

C) He is a very brave man.

(Change into comparative degree)



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D) "I am very interested in music" he said.

(Change into indirect speech)

OR

b) i) Write a report on the recent bomb blasts in Hyderabad.

ii) Rewrite the following :

A) My friend _____ (write) a letter when I went to visit her.

(Use the correct form of the verb)

B) The children _____ (walk) towards the park.

(Use the correct tense)

C) Fire causes smoke.

(Change the voice)

D) The Rose is more beautiful than the Lily.

(Change to positive degree)

4. a) i) Write a short note on the use of the dictionary to improve vocabulary.

ii) Write synonyms for the following :

A) Essential

B) Deficient

C) Confine

D) Indispensable

E) Fantasy

F) Pious.

OR

b) i) Write a short paragraph on 'Freedom of the press in India'.

ii) Write antonyms for the following :

A) Accept

B) Dull

C) Scarce

D) Genuine

E) Victory

F) Brief.

5. a) i) How does Swami Vivekananda explain the secret of work ?

ii) What was Andrew Carnegie's contribution to American society ?

iii) How does C.E.M. Toad present his views on civilization ?

OR

b) i) According to Spock, how do children react in adolescence ?

ii) Discuss Swami Vivekananda's views on the concept of work.

iii) 'Elaborate C.E.M. Toad's views on civilization.

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FACULTY OF TECHNOLOGY
B.Pharm. II Year (I Semester) (Main) Examination, November 2009
PHARMACEUTICAL ENGINEERING - I

Time: 3 Hours]

[Max. Marks: 70

Note : Answer all questions.

All questions carry equal marks.

1. a) i) Define ferrous and non-ferrous metals with examples. 2
ii) Define and classify corrosion. Discuss the types of corrosion. 6
iii) Write about glass as a material of plant construction along with its merits and demerits. 6

OR

- b) i) Define fluid statics and fluid dynamics. 7
ii) Write about dimensional analysis. 7
2. a) i) Starting from Bernoulli's equation derive an equation to determine velocity of flow of fluids by venturimeter. 8
ii) Write about LMTD for parallel flow and counter flow. 6

OR

- b) i) Differentiate between natural and forced convection heat transfer. Derive an equation for overall heat transfer coefficient. 8
ii) State Fourier's law and define thermal conductivity. 3
iii) Define Black body and Grey body. 3
3. a) i) Explain the principle of working of reciprocating pumps and classify them. Describe any one. 8
ii) What do you mean by :
i) Single stage pump
ii) Open impeller pump
iii) Air binding
iv) Tees. 6

OR



- b) i) Write about gate valve and globe valve with their advantages and disadvantages. 7
- ii) Describe the construction and working of double acting piston pump. 7
4. a) i) Define refrigeration and primary refrigerants. Discuss the various parts of a refrigeration cycle. 10
- ii) Explain how to determine dew point of air and write its significance. 4

OR

- b) i) Describe the construction and working of air conditioner. 8
- ii) Write about various types of blowers used for transportation of blowers. 6
5. a) i) Classify filtration equipment. Describe plate and frame press along with a note on washing type. 10
- ii) Write the theory of filtration. 4

OR

- b) i) Write about the following : 8
- A) Depth filtration
- B) Cake filtration
- C) Filter aids
- D) Screen filtration.
- ii) Describe any one filter that is used for filtration of parenterals. 6

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Code No. : 7010

FACULTY OF TECHNOLOGY
B.Pharm Second Year I Semester (Main) Examination, November 2009
PHARMACEUTICAL MICROBIOLOGY

Time: 3 Hours]

[Max. Marks: 70

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

1. a) i) Write about preservation of pure cultures. 8
ii) Write about transmission electron microscopy. 6

OR

- b) i) Discuss various methods for isolation of pure cultures from a mixed culture. 8
ii) Write about selective and differential media. 6
2. a) i) Describe the morphology and classification of Actinomycetes. 6
ii) Define differential staining with examples. Differentiate between gram-positive and gram-negative bacteria. 8

OR

- b) i) With the help of a neat diagram describe the structure of a typical bacterial cell. 10
ii) Write a note on acid-fast staining. 4
3. a) i) Discuss sterilisation by gamma radiation and gases. 8
ii) Write about the advantages of sterilization by filtration method. 6

OR

- b) i) Discuss the various factors influencing disinfection. 8
ii) What are the measures to be taken to maintain aseptic environment in the microbiology laboratory ? 6

4. a) i) Define immunity and classify immunity with examples and discuss the principles of different types of immunity. 10
 ii) What is meant by cell mediated immunity ? How is it imparted ? 4
- OR
- b) i) Distinguish between Endotoxins and Exotoxins. 6
 ii) Write about primary and specific defensive mechanism of body. 8
5. a) i) Explain the general scheme for the detection of coliforms in water samples. 6
 ii) Explain the mode of transmission and symptoms of the following diseases :
 A) Typhoid B) Diphtheria 8
- OR
- b) i) Write a note on the principle, procedure and application of pasteurisation. 6
 ii) Explain the mode of transmission and symptoms of the following diseases :
 A) Hepatitis-A B) Malaria 8

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FACULTY OF TECHNOLOGY

B. Pharmacy II Year I Semester (Main) Examination, November 2009

PHARMACEUTICAL ORGANIC CHEMISTRY – I

Time: 3 Hours]

[Max. Marks: 70

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

1. a) i) Explain the addition of hydrogen halide and hydration in presence of mercuric acetate to alkenes by Markovnikov's and anti-Markovnikov's rules. 8
- ii) Write a note on cis-trans reduction and acidity of 1-alkynes. 6
- OR
- b) i) Write a note on Baeyer's strain theory. 4
- ii) Define the terms configuration and conformation. Write the various conformations of cyclohexane and discuss their stability. 10
2. a) Explain the following with suitable examples.
- i) Mesomeric effect
- ii) Isomerism (structural and spatial)
- iii) Resonance
- iv) Hybrid orbitals. (3.5×4=14 Marks)

OR

- b) i) What is energy of activation ? Explain the energy diagram during the progress of the reaction giving suitable example. 7
- ii) Write a note on :
- A) Tautomerism
- B) Molecular orbital theory. 7



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3. a) Explain the kinetics, mechanism, stereochemistry and factors affecting the nucleophilic substitution reactions. 14

OR

- b) i) Write the general methods of preparation of alkylhalides. 7
ii) Give the tests to distinguish primary, secondary and tertiary alcohols. 4
iii) Write the Williamson's synthesis of ethers. 3

4. a) i) Describe any four nucleophilic addition reactions of aldehydes and ketones with mechanism. 10

- ii) Write any two methods for preparation of ketones. 4

OR

- b) i) Write a note on the relative acidity of carboxylic acids. 4
ii) Discuss the reactivity and synthetic applications of malonic ester and acetoacetic ester. 10

5. a) i) Write the tests to distinguish primary, secondary and tertiary amines. 5

- ii) Describe in brief the Hinsberg's method of separation of amines. 5

- iii) Write a note on relative basicity of amines. 4

OR

- b) i) Discuss the preparation and synthetic applications of aryl diazonium salts. 8

- ii) Write any two methods of preparation and acidity of nitroalkanes. 6