FACULTY OF PHARMACY

B. Pharmacy II – Year I – Semester (Main) Examination, November 2013

Subject : Pharmaceutical Organic Chemistry - I

Time : 3 hours   **Max. Marks : 70**

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

1.a) i) Define and give the significances of Hydrogen bonding.   5
    ii) Explain Isomerism with examples.   6
    iii) Define with example dipole moment.   3

OR

 b) i) Give a note on polarity of molecules.   5
    ii) Describe the progress of a reaction with energy diagram.   6
    iii) Write the significance of resonance effect.   3

2.a) i) Write any four methods of synthesis of alkanes.   7
    ii) Give the mechanism of free radical reactions.   7

OR

 b) i) Explain the stability of cycloalkanes by different theories.   10
    ii) Write the Anti Markonikov's addition.   4

3.a) i) How will you distinguish between primary, secondary and tertiary alcohols.   8
    ii) Write any four methods of preparation of alkyl halides.   6

OR

 b) i) Explain the elimination reaction with mechanism.   7
    ii) Give different methods of synthesis of ethers.   7

4.a) Give any four methods for the synthesis of carboxylic acids.   8
 b) Write the synthetic applications of molonic ester.   6

OR

 b) i) Give any four methods for synthesis of ketones.   8
    ii) Write the synthetic applications of aceto-acetic ester.   6

5.a) i) How do you differentiate between primary, secondary and tertiary amines with chemical reactions?   8
    ii) Write the applications of Aryl diazosium salt.   6

OR

 b) i) Discuss any four methods for synthesis of secondary aromative amines.   8
    ii) Give any three chemical reactions of aryl diazorium salt.   6

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FACULTY OF PHARMACY

B. Pharmacy II-Year I-Semester (Supplementary) Examination, November 2013
Subject : Pharmaceutical Engineering - I

Time : 3 Hours   Max. Marks: 70

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

1.(a)(i) Define Corrosion. Classify corrosion and explain about specific site corrosion and biological corrosion and combating methods of these corrosions.   (10)

(ii) Explain compositions, merits and demerits of stainless steel a material for plant construction.   (4)

OR

(b)(i) Differentiate steady and unsteady states.   (4)

(ii) Write about any four methods for prevention and control of corrosion.   (8)

2.(a)(i) State Fourier's law and derive an equation for heat transfer through a cylinder.   (7)

(ii) Explain the principle, construction, working of orifice meter and derive an equation for difference in flow of fluids.   (7)

OR

(b)(i) Differentiate between heaters and heat interchangers. Write about the construction, working and advantages of floating - head double pass heater.   (8)

(ii) Give the equation for Reynolds number with units.   (3)

(iii) Define conduction, convection and Radiation with examples.   (3)

3.(a)(i) Define conveying and explain about principle, construction, working, advantages and disadvantages of Belt conveyor.   (9)

(ii) Write short note on plug cock.   (5)

OR

(b)(i) Write about principle, construction, working, merits and demerits of screw conveyors.   (8)

(ii) Explain about peristatic pumps.   (6)

4.(a)(i) Explain various types of refrigerants.   (3)

(ii) Explain the theory of refrigeration.   (7)

(iii) Write about the applications of Air conditioning.   (4)

OR

(b)   Define the following :   (6)
(i) Humidity   (ii) Dew point
(iii) Dry bulb temperature   (iv) wet bulb temperature

(c)   Explain the basic construction of a refrigeration cycle.   (8)

5.(a)(i) What are ideal characters of filter media and explain about various types of materials used as filter media.   (6)

(ii) Write about the principle, construction, working and advantages of super centrifuge.   (6)

(iii) Give Poiseuille's equation with unit.   (2)

OR

(b)(i) Write a short note on filter aids.   (4)

(ii) Write about the principle, construction and advantages of meta filters.   (7)

(iii) Give Kozeny Carman equation with units.   (3).

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FACULTY OF PHARMACY

B. Pharmacy II – Year I – Semester (Main) Examination, November 2013

Subject : Pharmaceutical Analysis - I
(Chemical Analysis)

Time : 3 hours   **Max. Marks : 70**

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

1.a) i) Write a note on rejection of doubtful values.   6
   ii) What are primary and secondary standard substances? Give examples.   8

OR

  b) i) Define the terms :
          A) Specificity   B) Sensitivity   4
          C) Linearity   D) ruggedness

   ii) Explain the calibration of volumetri'c flask.   4
   iii) A substance was known to contain 15.20 $\pm$ 0.03% of a component, A. The
        results obtained by two experiments taking the same substance and employing
        the same analytical method as follows :   6

        Experiment – I   : % of A : 15.0,   15.31,   15.16 and 15.10
        Experiment – II : % of A : 15.30, 15.34,   15.36 and 15.36

        Discuss the results with reference to accuracy and precision of the
        measurements.

2.a) i) Calculate the pH of a 0.01 M acetic acid. (Dissociation constant pKa = 4.76).   4
   ii) Write a note on different concepts of acid and bases.   6
   iii) Write a note on common ion effect.   4

OR

  b) i) Derive equations to calculate the pH value of aqueous solutions of salts
         obtained from weak acid and strong base.   10
   ii) Write a note on amphoteric substances by giving few examples.   4

3.a) i) Describe the various steps involved in gravimetric analysis.   10
   ii) How do you prepare and standardize 0.1 N sodium thiosulphate?   4

OR

  b) i) Explain in detail about redox indicators.   7
   ii) Explain Volhard's method for the determination of chlorides.   7

4.a) i) Write about different solvents and indicators used in non-aqueous titration.   7
   ii) Discuss the theory and applications of complexometric analysis with examples.   7

OR

  b) i) Explain Iodometry and Iodimetry with examples.   7
   ii) Write the principle and procedure involved in assay of calcium gluconate.   7

5.a) i) Calculate the number of moles of sodium hydroxide in 500 ml. of 0.1 M sodium
         hydroxide solution.   4
   ii) Calculate the percentage composition of the elements in Na_2CO_3 [Na=23 ,
        C = 12, O = 16].   5
   iii) 0.202 gm of a carbon compound on combustion gave 0.361 gm of CO_2 and
         0.147 gm of water. Calculate the empirical formula of the compound.   5

OR

  b) i) Write the mass balance equation for the following :   2x3=6
          A) Reaction between ammonium hydroxide and sulphuric acid
          B) Reaction between sodium carbonate and hydrochloric acid
   ii) Calculate the percentage composition of the elements in $Na_2S_2O_4$
        [Na = 23, S = 32, O = 16].   5
   iii) Calculate the molarity of 17 g of pure Na_2CO_3 in 600 ml. of solution.   3

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FACULTY OF PHARMACY

B. Pharmacy II – Year I – Semester (Main) Examination, November 2013
Subject : Communicative English

Time : 3 hours   Max. Marks : 70

Note: Answer all questions. All questions carry equal marks.
Part – A (4 x 5 = 20)

1.a) What are the advantages of group communication?
OR
  b) Explain the role of Wit and Humor in communication.

2.a) What is the role of body language in oral communication?
OR
  b) What is the importance of evaluating and organizing the collected information for presentation?

3.a) What is the use of Thesaurus?
OR
  b) Explain the situations for the use of polite expressions? Discuss with the help of examples.

4.a) Draft a letter of application for the post of marketing executive in a reputed pharmaceutical company.
OR
  b) Discuss the advantages of listening in verbal communication as a method of learning.

Part – B (4 x 5 = 20)

1. Give the synonym for the following :
    a) anguish   b) colossal   c) vigilant   d) ferocious   e) benevolent

2. Give the antonym for the following :
    a) amateur   b) pride   c) timid   d) promote   e) defendant

3. Explain the following one word substitutes in one or two sentences.
    a) enigma   b) accentuated c) indelible   d) wriggles   e) theist

4. Rewrite the sentences as directed.
    a) My new car is _____ (fast) my old one.   (use the correct form of verb)
    b) A post card has been sent to Ram.   (change into passive voice)
    c) They said to him, "we will hand over our work tomorrow". (change into indirect speech)
    d) What happens to all money he earns is a mystery to us? (insert appropriate article).
    e) They have been working here _____ 2010.   (insert appropriate preposition)

Part – C (5 x 6 = 30)

1.a) Why is it important to set up some form of world government?
OR
  b) What are the defects of our civilization, according to C.E.M. Joad?

2.a) Did Carnegie become a wiser and more useful man.
OR
  b) Why was Carnegie a huge success as steel king?

3.a) How can one not be touched by sin, according to Swami Vivekananda?
OR
  b) According to Swami Vivekananda, how is each man's character determined.

4.a) What are the three principal elements to make up the identity of an individual?
OR
  b) Why do some boys turn their irritation towards their father?

5.a) Draft a technical report.
OR
  b) Draft a covering letter with an enclosed resume for the post of analyst in a pharmaceutical company.

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FACULTY OF PHARMACY

B. Pharmacy III Year I-Semester (Main) Examination, November 2013

Subject : Pharmaceutical Microbiology

Paper - Theory

Time: 3 Hours **Max.Marks: 70**

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

1.(a)	i) Explain different methods of bacterial count.	10
	ii) Write about bright field microscopy.	4
	OR	
(b)	i) Explain about preservation of pure cultures.	10
	II) Distinguish between autotrophs and heterotrops.	4

2.(a)	i) Explain the process of physical and chemical mutagenesis.	10
	ii) Explain about acid fast staining.	4
	OR	
(b)	Explain lytic and lysogenic cycle in viruses.	14

3.(a)	Explain in detail about heat sterilization.	14
	OR	
(b)	Explain factors influencing disinfectants and dynamics of disinfections.	14

4.(a)	Describe the process of cellular and humoral immunity.	14
	OR	
(b)	What are antigens and antibodies? Describe in detail about precipitation and agglutination reactions.	14

5.(a)	i) Write a note on general modes of transmission of diseases.	7
	ii) Write the symptoms of diphtheria and polio.	7
	OR	
(b)	i) Write a note on pencillium species.	10
	ii) Write the modes of transmission of tuberculosis.	4

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FACULTY OF PHARMACY

B. Pharmacy II – Year I – Semester (Main) Examination, November 2013

Subject : Pharmaceutical Organic Chemistry - I

Time : 3 hours   **Max. Marks : 70**

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

1.a) i) Define and give the significances of Hydrogen bonding.   5
   ii) Explain Isomerism with examples.   6
   iii) Define with example dipole moment.   3

OR

 b) i) Give a note on polarity of molecules.   5
   ii) Describe the progress of a reaction with energy diagram.   6
   iii) Write the significance of resonance effect.   3

2.a) i) Write any four methods of synthesis of alkanes.   7
   ii) Give the mechanism of free radical reactions.   7

OR

 b) i) Explain the stability of cycloalkanes by different theories.   10
   ii) Write the Anti Markonikov's addition.   4

3.a) i) How will you distinguish between primary, secondary and tertiary alcohols.   8
   ii) Write any four methods of preparation of alkyl halides.   6

OR

 b) i) Explain the elimination reaction with mechanism.   7
   ii) Give different methods of synthesis of ethers.   7

4.a) Give any four methods for the synthesis of carboxylic acids.   8
  b) Write the synthetic applications of molonic ester.   6

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5.a) i) How do you differentiate between primary, secondary and tertiary amines with
         chemical reactions?   8
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OR

 b) i) Discuss any four methods for synthesis of secondary aromative amines.   8
   ii) Give any three chemical reactions of aryl diazorium salt.   6

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FACULTY OF PHARMACY

B. Pharmacy II-Year I-Semester (Supplementary) Examination, November 2013
Subject : Pharmaceutical Engineering - I

Time : 3 Hours   Max. Marks: 70

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

1.(a)(i) Define Corrosion. Classify corrosion and explain about specific site corrosion and biological corrosion and combating methods of these corrosions. (10)

   (ii) Explain compositions, merits and demerits of stainless steel a material for plant construction. (4)

OR

   (b)(i) Differentiate steady and unsteady states. (4)

   (ii) Write about any four methods for prevention and control of corrosion. (8)

2.(a)(i) State Fourier's law and derive an equation for heat transfer through a cylinder. (7)

   (ii) Explain the principle, construction, working of orifice meter and derive an equation for difference in flow of fluids. (7)

OR

   (b)(i) Differentiate between heaters and heat interchangers. Write about the construction, working and advantages of floating - head double pass heater. (8)

   (ii) Give the equation for Reynolds number with units. (3)

   (iii) Define conduction, convection and Radiation with examples. (3)

3.(a)(i) Define conveying and explain about principle, construction, working , advantages and disadvantages of Belt conveyor. (9)

   (ii) Write short note on plug cock. (5)

OR

   (b)(i) Write about principle, construction, working , merits and demerits of screw conveyors. (8)

   (ii) Explain about peristatic pumps. (6)

4.(a)(i) Explain various types of refrigerants. (3)

   (ii) Explain the theory of refrigeration. (7)

   (iii) Write about the applications of Air conditioning. (4)

OR

   (b)   Define the following : (6)
           (i) Humidity   (ii) Dew point
           (iii) Dry bulb temperature   (iv) wet bulb temperature

   (c)   Explain the basic construction of a refrigeration cycle. (8)

5.(a)(i) What are ideal characters of filter media and explain about various types of materials used as filter media. (6)

   (ii) Write about the principle, construction, working and advantages of super centrifuge. (6)

   (iii) Give Poiseuille's equation with unit. (2)

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   (b)(i) Write a short note on filter aids. (4)

   (ii) Write about the principle, construction and advantages of meta filters. (7)

   (iii) Give Kozeny Carman equation with units. (3).

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FACULTY OF PHARMACY

B. Pharmacy II – Year I – Semester (Main) Examination, November 2013

Subject : Pharmaceutical Analysis - I
(Chemical Analysis)

Time : 3 hours   **Max. Marks : 70**

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

1.a) i) Write a note on rejection of doubtful values.   6
    ii) What are primary and secondary standard substances? Give examples.   8
OR
  b) i) Define the terms :
        A) Specificity   B) Sensitivity   4
        C) Linearity   D) ruggedness

    ii) Explain the calibration of volumetri'c flask.   4
    iii) A substance was known to contain $15.20 \pm 0.03\%$ of a component, A. The
         results obtained by two experiments taking the same substance and employing
         the same analytical method as follows :   6

         Experiment – I   : % of A : 15.0,   15.31,   15.16   and   15.10
         Experiment – II : % of A : 15.30,   15.34,   15.36   and   15.36

         Discuss the results with reference to accuracy and precision of the
         measurements.

2.a) i) Calculate the pH of a 0.01 M acetic acid. (Dissociation constant pKa = 4.76).   4
    ii) Write a note on different concepts of acid and bases.   6
    iii) Write a note on common ion effect.   4
OR
  b) i) Derive equations to calculate the pH value of aqueous solutions of salts
        obtained from weak acid and strong base.   10
    ii) Write a note on amphoteric substances by giving few examples.   4

3.a) i) Describe the various steps involved in gravimetric analysis.   10
    ii) How do you prepare and standardize 0.1 N sodium thiosulphate?   4
OR
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4.a) i) Write about different solvents and indicators used in non-aqueous titration.   7
    ii) Discuss the theory and applications of complexometric analysis with examples.   7
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5.a) i) Calculate the number of moles of sodium hydroxide in 500 ml. of 0.1 M sodium
         hydroxide solution.   4
    ii) Calculate the percentage composition of the elements in Na_2CO_3 [Na=23 ,
         C = 12, O = 16].   5
    iii) 0.202 gm of a carbon compound on combustion gave 0.361 gm of CO_2 and
         0.147 gm of water. Calculate the empirical formula of the compound.   5
OR
  b) i) Write the mass balance equation for the following :   2x3=6
        A) Reaction between ammonium hydroxide and sulphuric acid
        B) Reaction between sodium carbonate and hydrochloric acid
    ii) Calculate the percentage composition of the elements in $Na_2S_2O_4$
         [Na = 23, S = 32, O = 16].   5
    iii) Calculate the molarity of 17 g of pure Na_2CO_3 in 600 ml. of solution.   3

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FACULTY OF PHARMACY

B. Pharmacy II – Year I – Semester (Main) Examination, November 2013
Subject : Communicative English

Time : 3 hours   Max. Marks : 70

Note: Answer all questions. All questions carry equal marks.
Part – A (4 x 5 = 20)

1.a) What are the advantages of group communication?
OR
  b) Explain the role of Wit and Humor in communication.

2.a) What is the role of body language in oral communication?
OR
  b) What is the importance of evaluating and organizing the collected information for presentation?

3.a) What is the use of Thesaurus?
OR
  b) Explain the situations for the use of polite expressions? Discuss with the help of examples.

4.a) Draft a letter of application for the post of marketing executive in a reputed pharmaceutical company.
OR
  b) Discuss the advantages of listening in verbal communication as a method of learning.

Part – B (4 x 5 = 20)

1. Give the synonym for the following :
   a) anguish   b) colossal   c) vigilant   d) ferocious   e) benevolent

2. Give the antonym for the following :
   a) amateur   b) pride   c) timid   d) promote   e) defendant

3. Explain the following one word substitutes in one or two sentences.
   a) enigma   b) accentuated c) indelible   d) wriggles   e) theist

4. Rewrite the sentences as directed.
   a) My new car is _____ (fast) my old one.   (use the correct form of verb)
   b) A post card has been sent to Ram.   (change into passive voice)
   c) They said to him, "we will hand over our work tomorrow". (change into indirect speech)
   d) What happens to all money he earns is a mystery to us? (insert appropriate article).
   e) They have been working here _____ 2010.   (insert appropriate preposition)

Part – C (5 x 6 = 30)

1.a) Why is it important to set up some form of world government?
OR
  b) What are the defects of our civilization, according to C.E.M. Joad?

2.a) Did Carnegie become a wiser and more useful man.
OR
  b) Why was Carnegie a huge success as steel king?

3.a) How can one not be touched by sin, according to Swami Vivekananda?
OR
  b) According to Swami Vivekananda, how is each man's character determined.

4.a) What are the three principal elements to make up the identity of an individual?
OR
  b) Why do some boys turn their irritation towards their father?

5.a) Draft a technical report.
OR
  b) Draft a covering letter with an enclosed resume for the post of analyst in a pharmaceutical company.

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FACULTY OF PHARMACY

B. Pharmacy III Year I-Semester (Main) Examination, November 2013

Subject : Pharmaceutical Microbiology

Paper - Theory

Time: 3 Hours   **Max.Marks: 70**

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

1.(a) i) Explain different methods of bacterial count.   10
     ii) Write about bright field microscopy.   4

<div align="center">OR</div>

 (b) i) Explain about preservation of pure cultures.   10
     II) Distinguish between autotrophs and heterotrops.   4

2.(a) i) Explain the process of physical and chemical mutagenesis.   10
     ii) Explain about acid fast staining.   4

<div align="center">OR</div>

 (b) Explain lytic and lysogenic cycle in viruses.   14

3.(a) Explain in detail about heat sterilization.   14

<div align="center">OR</div>

 (b) Explain factors influencing disinfectants and dynamics of disinfections.   14

4.(a) Describe the process of cellular and humoral immunity.   14

<div align="center">OR</div>

 (b) What are antigens and antibodies? Describe in detail about precipitation and
agglutination reactions.   14

5.(a) i) Write a note on general modes of transmission of diseases.   7
     ii) Write the symptoms of diphtheria and polio.   7

<div align="center">OR</div>

 (b) i) Write a note on pencillium species.   10
     ii) Write the modes of transmission of tuberculosis.   4

<div align="center">****</div>

FACULTY OF PHARMACY

B. Pharmacy II Year I – Semester (Supply) Examination, March / April 2013

Subject: Pharmaceutical Analysis – I (Chemical Analysis)

Time: 3Hours   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 following terms: (4x2=8)
(A) Standard solution (B) End Point   (C) Equivalence Point   (D) Indicator
OR
 (b) i) What is meant by calibration? How do you calibrate burette?   (6)
ii) Define error. Classify and explain different types of errors.   (8)

2.(a) i) Write notes on different theories of acids and bases.   (8)
ii) Write short notes on: (2x3=6)
(A) Solubility product   (B) Law of mass action
OR
 (b) i) How do you prepare and standardize 0.1 N HCl.   (4)
ii) Write a note on role of buffers in pharmacy.   (6)
iii) The solubility product of silver chloride is 2.8×10^{-10} mol^2/lit^2. Calculate its
solubility in g/L.   (4)

3.(a) i) Write the methods of balancing of oxidation reduction reactions with examples. (6)
ii) Explain the steps involved in gravimetric analysis.   (8)
OR
 (b) i) How do you prepare and standardize 0.1 N sodiumthiosulphate solution?   (4)
ii) Write a note on redoc indicators.   (5)
iii) Write a note on precipitation and coagulation used in gravimetric analysis.   (5)

4.(a) i) Write a note on argentometric titrations.   (5)
ii) Write the principle involved in non-aqueous titrations and mention its
applications.   (5)
iii) How do you prepare and standardize 0.01 M EDTA solution?   (4)
OR
 (b) i) Write the principle involved in complexometric titrations with suitable example.
Write a note on indicators used in complexometric titrations.   (7)
ii) How do you prepare and standardize 0.1 N $HClO_4$.   (4)
iii) Write a note on adsorbents used in gas analysis.   (3)

5.(a) i) Calculate the number of moles of sodium hydroxide in 200 ml of 1 M sodium
hydroxide solution.   (4)
ii) Define and explain the terms
A) Emperical formula   (B) Molecular formula
C) Theoretical yield   (D) Percentage yield   (4x2½) =   (10)
OR
 (b) i) Describe the mole concept and avogadro's number.   (6)
ii) Calculate the percentagte composition of elements in $Na_2S_2O_3$.   (4)
iii) Write the mass balance equation for the following.   (2x2) =   (4)

1. $NaOH + H_2SO_4 \rightarrow Na_2SO_4 + H_2O$
2. $C_6H_{12}O_6 \rightarrow C_2H_5OH + CO_2$

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FACULTY OF PHARMACY

B. Pharmacy II Year I Semester (Suppl.) Examination, March / April 2013

Communicative English

Time: 3 Hours   Max.Marks: 70

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

PART - A

(4X5 = 20)

1.(a)   Explain the importance of body language in oral communication.
OR
(b)   Classify different media and critically examine the role of each medium in promoting communication.

2.(a)   How to introduce oneself and others?
OR
(b)   Explain the role of wit and humour in communication.

3.(a)   What is a notice? Prepare a notice to inform about changed working hours to students.
OR
(b)   Draft a letter of enquiry to buy fans to your college.

4.(a)   Differentiate between formal and informal communication.
OR
(b)   What is the use of dictionary?

PART - B

1.   Give the antonym for the following.   (4x5 = 20)

1. Persuade
2. Lethargy
3. Selfish
4. Enormous
5. Civilised

2.   Give one word substitutes for the following:

1) To visualise future's achievements and goals.
2) A place of safety especially for refugees.
3) One who hates women
4) Murderer of father
5) A stage when a child develops into an adult.

3.   Correct the errors and re-write the sentences

1) Let us discuss about the problem
2) I got passing marks
3) The wages of sin are death
4) He is habituated to smoking
5) I am strong enough to look after me.

4.   Rewrite the following sentences as directed

1) He said to me, "Help him in settling the accounts". [change into indirect speech]
2) He has passed many difficulties. [Insert appropriate preposition]
3) People say that Einstein was a genius. [change into passive]
4) I _____ the telephone bill yet (not pay) [use the correct form of verb]
5) Maldives is group of islands. [insert appropriate article].

...2.

PART - C

(5X6 = 30)

1.(a) Do you find Vivekananda's plea for non-attachment convincing - Give reasons.

OR

(b) What was the teaching of Swami Vivekananda regarding 'work'?

2.(a) What are the dos and don'ts for parents in the brought up of children?

OR

(b) Why does 'School failure' occur?

3.(a) What did Andrew Carnegie learn from his parents?

OR

(b) How did Carnegie's 'Gospel of wealth' influence the modern world?

4.(a) According to C.E.M. Joad what are the defects of our civilization.

OR

(b) How important are order and safety? Explain with examples.

5.(a) "Reports are numerous". Explain the different types with examples.

OR

(b) Write an essay on 'The world of my dreams'.

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FACULTY OF PHARMACY

B. Pharmacy II-Year I-Semester (Supplementary) Examination, March / April 2013

Subject : Pharmaceutical Engineering - I

Time : 3 Hours   Max. Marks: 70

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

1.(a) Compare plastics with metals as materials of plant construction. (7)
  (b) Explain steady state and unsteady state. (3)
  (c) Discuss the different factors that influence the rate of corrosion. (4)

OR

  (d) Define (i) Unit operations   (ii) Unit processes. (3)
  (e) Classify and enumerate the different types of corrosion. (4)
  (f) Discuss the factors to be considered in the selection of materials for plant construction. (7)

2.(a) Derive an equation for the overall heat transfer coefficient when a liquid is heated by another liquid through a metal wall. (7)
  (b) Write a note on Bernoull's theorem. (7)

OR

  (c) Write a note on
     (i) Heat interchangers (6)
     (ii) Flow meters (4)
     (iii) Entrainment separators (4)

3.(a) Explain the design and operation of centrifugal pump. (7)
  (b) Describe the construction, working of belt conveyor systems. Add a note on its advantages and limitations. (7)

OR

  (c) Compare reciprocating pumps with centrifugal pumps. (5)
  (d) Write a note on (9)
     (i) Ejectors   (ii) Fittings   (iii) Vacuum pumps

4.(a) Define: (6)
     (i) Humidity   (ii) Relative Humidity   (iii) Saturated Humidity
  (b) Describe a refrigeration system using a compression refrigeration system with a neat labelled diagram. (8)

OR

  (c) What are cooling towers? Explain their design and operation.
  (d) Discuss the factors that determine the refrigeration load in pharmaceutical plant.
  (e) What is coefficient of performance of a refrigeration system?

5.(a) What are filter aids? What are the characteristics of an ideal filter aid? (6)
  (b) Describe the stream line filter and advantages and applications of it. (8)

OR

  (c) Write a note on : (6)
     (i) Membrane filters   (ii) Seitz filter
  (d) What is critical speed of centrifuge and write its significance in the operation of centrifuge. (8)

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FACULTY OF PHARMACY

B. Pharmacy II Year I – Semester (Suppl.) Examination, March / April 2013

Subject: Pharmaceutical Microbiology

Time: 3 Hours   Max.Marks: 70

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

1.(a) i) Write the methods of identification of bacteria.   (10)
      ii) Describe the replication phases of viruses.   (4)
<div align="center">OR</div>

 (b) i) Discuss nutritional and gaseous requirements of bacteria.   (10)
      ii) Write about the methods of isolation of viruses.   (4)

2.(a) i) What are mutations? Explain various types of mutations.   (4)
      ii) Explain repair mechanisms.   (10)
<div align="center">OR</div>

 (b) i) Explain reproduction and growth phases in bacteria.   (10)
      ii) Explain simple staining technique.   (4)

3.(a) i) Explain any 5 groups of disinfectants with mechanism of action and
     applications.   (10)
      ii) Write about sterilization indicators.   (4)
<div align="center">OR</div>

 (b) i) Write about Redial-Walker Test and Chick-Martin test.   (10)
      ii) Explain about fractional sterilization.   (4)

4.(a) What are Exotoxins and Endotoxins? Explain in detail about phagocytosis.   (4+10=14)
<div align="center">OR</div>

 (b) What are antigens and antibodies? Explain in detail about different types of
     antibodies.   (4+10=14)

5.(a) i) Write the symptoms, modes of transmission, pathogenesis, diagnosis,
     prevention
      and treatment of (a) Diphtheria   (b) Poliomyelitis.   (10)
      ii) What is Imvic Test.   (4)
<div align="center">OR</div>

 (b) Discuss about streptomyces sps.   (14)

<div align="center">****</div>

FACULTY OF PHARMACY

B. Pharmacy II-Year I-Semester (Supplementary) Examination, March / April 2013

Subject : Pharmaceutical Organic Chemistry - I

Time : 3 Hours   Max. Marks: 70

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

1.(a)   Discuss the following with suitable examples   (4x3.5)
    (i) Polarity and dipole moment
    (ii) Hybridization
    (iii) Atomic and molecular orbitals
    (iv) Hydrogen bonding
<div align="center">OR</div>

  (b)(i) Explain the energy diagrams of reactants and products during the course of
     reaction.   (7)
   (ii) Write a note on the following: (7)
    (A) Resonance   (B) Inductive and mesomieric effect

2.(a)(i) Explain Markonikov's and AntiMarkonikov's addition with examples.   (7)
   (ii) Explain the mechanism involved in the addition of HBr to 2-Butane according
    to Markonikov's and antiMarkonikov's addition.   (7)
<div align="center">OR</div>

  (b)(i) Write any four methods of preparation of alkenes.   (4)
   (ii) Discuss Bayer's strain theory.   (3)
  (iii) Discuss various conformations of cyclohexane and n-Butane giving their
    stability.   (7)

3.(a)(i) Write any four methods to prepare n-propyl bromide.   (4)
   (ii) Discuss in detail the mechanism and stereo chemistry involved in SN^1 and
    SN^2 reactions.   (10)
<div align="center">OR</div>

  (b)(i) Explain the mechanism involved in dehydration of alcohols.   (7)
   (ii) How do you prepare ethers by Williamson's synthesis?   (3)
  (iii) List out the differences between Nucleophilic substitution Vs. Elimination. (4)

4.(a)(i) Discuss any four nucleophilic addition reactions of carbonyl compounds with
    mechanisms.   (7)
   (ii) How do you synthesize Schiff bases?   (3)
  (iii) Write any three methods of preparation of aldehydes.   (4)
<div align="center">OR</div>

  (b)(i) Write in detail the acidity of carboxylic acids.   (3)
   (ii) Write any three methods to synthesize carboxylic acids.   (3)
  (iii) Discuss the reactivity and synthetic applications of Diethyl malonate and
    Ethylaceto acelate.   (8)

5.(a)(i) Discuss basicity and important reactions of amines.   (6)
   (ii) Give the synthetic applications of aryl diazonium salts.   (4)
  (iii) Explain Hinsbergs method of separation of a mines.   (4)
<div align="center">OR</div>

  (b)(i) Write a note on Sandmeyer's reaction.   (3)
   (ii) Write any three methods to prepare nitro alkanes.   (5)
  (iii) Write any four important reactions of amines.   (6)
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<div align="center">*******</div>