

**FACULTY OF PHARMACY**

**B. Pharmacy (NON-CBCS) 2/4 I-Semester (Backlog) Examination, May 2023**

**Subject: Pharmaceutical Engineering – I**

**Time: 3 Hours**

**Max. Marks: 70**

**Note: Answer any five questions. All questions carry equal marks.**

**(5 x 14 = 70 Marks)**

1. (a) Give a brief account of the properties and uses of the different groups of stainless steel.  
(b) Write a note on factors affecting in the selection of materials for pharmaceutical plants.
2. (a) Write the important properties, uses and composition of any two non-ferrous metals used in pharmaceutical industry.  
(b) Define corrosion. Classify corrosions.
3. Write a short note on:  
(i) Rotameter                      (ii) Bernoulli's theorem              (iii) Steam traps.
4. (a) Describe the construction, advantages and disadvantages of any one heat exchanger.  
(b) Explain the principle, construction, working of orifice meter and derive an equation for difference in flow of fluids.
5. (a) Define conveying and explain about principle, construction, working, advantages and disadvantages of Belt conveyor.  
(b) Explain about peristaltic pumps.
6. (a) Write about principle, construction, working, merits and demerits of screw conveyors.  
(b) Enlist the equipment used for transportation of gases. Add a note on Fans.
7. (i) Explain various types of refrigerants.  
(ii) Explain the theory of refrigeration.  
(iii) Write about the applications of Air conditioning.
8. (a) What are cooling towers? Explain their design and working.  
(b) Explain the methods available for humidification and Dehumidification.
9. (a) Write a note on plate and frame filter.  
(b) Give the construction, working and uses of non-perforated basket centrifuge.
10. (i) Write a short note on filter aids.  
(ii) Write about the principle, construction and advantages of meta filters.  
(iii) Give Kozeny Carman equation with units.

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**FACULTY OF PHARMACY**

**B. Pharmacy 2/4-Year I-Semester (NON-CBCS) (Backlog) Examination,  
April / May 2023**

**Subject: Pharmaceutical Analysis-I (Chemical Analysis)**

**Time: 3 Hours**

**Max. Marks: 70**

**Note: Answer any five questions. All questions carry equal marks.**

1. (a) Explain about the calibration and its importance in analysis.  
(b) Write a note on rejection of doubtful value.
2. (a) Write a note on significant figures and rules for computation.  
(b) Describe different methods of expressing concentration of standard solution.
3. (a) Write a note on: (i) Common ion effect (ii) Salt Hydrolysis  
(b) How to prepare and standardize 0.1 N H<sub>2</sub>SO<sub>4</sub>?
4. (a) Discuss the theories of neutralization indicators.  
(b) Write note on different theories of Acids and Bases.
5. (a) Explain the steps involved in gravimetric analysis.  
(b) How to prepare and standardize 0.1 N K MnO<sub>4</sub>?
6. (a) Discuss the principle of redox titration and write a note on redox indicators.  
(b) Write notes on co-precipitation and coagulation used in gravimetric analysis.
7. (a) Explain the principle involved in complexometric titrations.  
(b) Write notes on solvents used in non-aqueous titrations.
8. (a) Write notes on Argentometric titrations.  
(b) Write short notes on masking and demasking agents.
9. (a) Define the terms: (i) Mole (ii) Empirical formula (iii) Molecular formula  
(iv) Theoretical yield  
(b) Calculate the percentage composition of elements in K<sub>2</sub>Cr<sub>2</sub>O<sub>7</sub> [K=39, Cr=52, O=16].
10. (a) How many moles are present in 53 gm of sodium carbonate and 60 grams of sodium hydroxide.  
(b) Calculate the percentage composition of the elements in Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub> [Na=23, S=32, O=16].

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**FACULTY OF PHARMACY**

**B. Pharm 2/4-I Semester (NON-CBCS) (Backlog) Examination, May 2023**

**Subject: Communicative English**

**Time: 3 Hours**

**Max. Marks: 70**

**PART-A**

**Note: Answer all the questions.**

**(4 x 5 = 20 Marks)**

1. (a) Explain the role and importance of communication and about barriers to communication.  
(b) Interpersonal communication is an important area of communication. Explain.
2. (a) Explain the basic principles we need to remember while writing a paragraph.  
(b) Define notice and describe the importance with the help of a model notice.
3. (a) Explain the role of “wit and humour” in communication.  
(b) Write a short note on the use of dictionary to improve vocabulary.
4. (a) Write in your own words about the role of a teacher in a classroom.  
(b) Discuss the different types of reports in detail

**PART-B**

**Note: Answer all the questions.**

**(4 x 5 = 20 Marks)**

1. Give the synonyms for the following  
a) Hay-rick b) Seam stress c) Consequence d) Ablaze e) Futile
2. Give the antonyms for the following  
a) Human b)Flexible c) Conceal d)Precede e) Urban
3. Explain the following one word substitutes in one or two sentences  
a) Asylum b) Unanimous c) Frontiers d) Optimist e) Invalid
4. Rewrite the sentences as directed.  
a) The robot does all the work.. ( change to passive voice)  
b) There \_\_\_\_\_(is) a sudden silence when he entered the hall. (use appropriate form of verb)  
c) Students sometimes don't listen \_\_\_\_\_ their teachers. (use appropriate form of preposition)  
d) They said, “Do not walk on the grass”. (change into indirect speech)  
e) \_\_\_\_\_ mosquito has just bitten me. (insert appropriate article)

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**PART-C**

**Note: Answer all the questions.**

**(5 x 6 = 30 Marks)**

1. (a) How important are order and safety? Explain with example.  
**(OR)**  
(b) Why is it important to set up some form of world government according to C.E.M Joad?
2. (a) What did Andrew Carnegie learn from his parents.  
**(OR)**  
(b) Why was Carnegie a huge success as steel king?
3. (a) Why do some boys turn their irritation towards mothers?  
**(OR)**  
(b) What are the aspects of rebelliousness in adolescents?
4. (a) How can one not be touched by sin, according to Swami Vivekananda?  
**(OR)**  
(b) What was the teaching of Swami Vivekananda regarding work?
5. (a) How do you conduct a seminar/conference?  
**(OR)**  
(b) As a librarian of your organisation, write a letter to the publisher requesting for a catalogue.

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**FACULTY OF PHARMACY**

**B. Pharmacy 2/4 I-Semester (NON-CBCS) (Backlog) Examination, May 2023**

**Subject: Pharmaceutical Microbiology**

**Time: 3 Hours**

**Max. Marks: 70**

**Note: Answer any five questions.**

**(5 x 14 = 70 Marks)**

1. (a) Explain in detail about identification of bacteria with emphasis to staining techniques.  
(b) Discuss nutrition requirements of bacteria.
2. (a) Explain different methods of bacterial count.  
(b) Explain in detail about preservation of pure cultures
3. Explain in detail about replication of animal viruses.
4. What are mutations? Explain about the Types of mutations? Explain in detail about chemical mutagenesis.
5. Define Disinfectant, Antiseptic, Bacteriostatic. Explain about control of microorganisms by chemical methods.
6. (a) Explain in detail about heat and radiation sterilization  
(b) Explain about sterilization indicators.
7. Explain about Phagocytosis and hypersensitivity reactions
8. Describe Immune response and Humoral Immunity
9. (a) Write the systematic study of E.Coli.  
(b) Write in detail about microbiology of milk
10. Write in detail about Causative organism, Mode of transmission, pathogenesis, symptoms, diagnosis, treatment, prevention and control of malaria and Typhoid

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Code No: E-12054/NON-CBCS

**FACULTY OF PHARMACY**

**B. Pharmacy 2/4 II - Year I - Semester (NON-CBCS) (Backlog) Examination,  
November 2022**

**Subject: Pharmaceutical Microbiology**

**Time: 3 Hours**

**Max. Marks: 70**

**Note: Answer any five questions. All questions carry equal marks.**

1. (a) Write in detail about cultivation of aerobic and anaerobic bacteria.  
(b) Explain different methods of bacterial count.
2. (a) Describe the methods of viral replication.  
(b) Write about the identification and preservation of pure culture.
3. Write the difference between simple staining and negative staining. Explain in detail about Acid fast staining.
4. (a) What are mutations? Write the types of mutations. Explain isolation of mutants.  
(b) Discuss the modes of bacterial reproduction.
5. (a) Explain in detail about heat and radiation sterilization.  
(b) Explain the factors influencing disinfectants.
6. What is Phenol Coefficient test? Explain in detail about suspension tests.
7. Explain about humoral immunity and cell mediated immunity.
8. What are serological reactions? Explain complement fixation tests and enzyme immuno assays.
9. Write in detail about Causative organism, Mode of transmission, pathogenesis, symptoms, diagnosis, treatment, prevention and control of Tuberculosis and Influenza.
10. (a) Describe the systematic study of *Penicillium* species.  
(b) Discuss the causes and symptoms of infective hepatitis.

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**FACULTY OF PHARMACY**

**B. Pharmacy 2/4 I Semester (NON-CBCS) (Backlog) Examination, November 2022**

**Subject: Communicative English**

**Time: 3 Hours**

**Max. Marks: 70**

**Note: Answer any five questions. All questions carry equal marks.**

1. (a) Differentiate between formal and informal communication?  
(b) Explain the ways to apologise in different situations?
2. Write short notes on the following:  
(a) Importance of Non-Verbal Communication.  
(b) Stages in preparing for a presentation.
3. (a) What is a memorandum? Explain its features with the help of a model memo?  
(b) What are the techniques of delivering an effective speech?
4. (i) Give a synonym of the following  
(a) Ingenious (b) Infallible (c) Envisage (d) Benevolent  
(ii) Give an antonym for the following  
(a) Satiated (b) Intemperate (c) Introvert (d) Exculpate  
(iii) Explain the one word substitute in one or two sentences.  
(a) Panacea (b) Connoisseur (c) Pseudonym (d) Allegory (e) Eccentric  
(iv) Rewrite the sentences as directed:  
(a) On a Foreign tour, players have to adapt \_\_\_\_\_ the changed climatic conditions.  
(Insert appropriate preposition)  
(b) I know I \_\_\_\_\_ (leave) no stone unturned to pass the CAT exam (use the correct form of verb)  
(c) He is doing too many things at the same time (change in to passive voice).  
(d) The manager said, "Where is your application?" (Change in to indirect speech)
5. (a) Explain the barriers to communication?  
(b) Discuss the communication mediums?
6. (a) What are the ways to develop Vocabulary?  
(b) Draft a letter for the post of a marketing executive?
7. (a) Explain the barriers of listening?  
(b) What to be avoided in writing?
8. (a) Explain the role of wit and humour in communication?  
(b) Write a paragraph in about 150 words on the statement "The solution always lies in the problem"?
9. (a) Write about Swami Vivekananda's philosophy in "The Secret of Work"?  
(b) Why does school failure occur in the opinion of Benjamin Spock?
10. (a) How did Carnegie's "Gospel of Wealth" influence the modern world?  
(b) Discuss C.E.M. Joad's "Our Own Civilization" in terms of application today.

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**FACULTY OF PHARMACY**

**B. Pharmacy 2/4 Year I– Semester (NON-CBCS) (Backlog) Examination,  
November 2022**

**Subject: Pharmaceutical Analysis – I (Chemical Analysis)**

**Time: 3 Hours**

**Max. Marks: 70**

**Note: Answer any five questions. All questions carry equal marks.**

1. (a) What is a primary standard? Explain briefly giving examples.  
(b) Explain accuracy, precision, error and linearity with examples.
2. (a) What is calibration? Why calibration of glassware is necessary? How do you calibrate a burette?  
(b) Explain about methods of expressing concentration.
3. (a) Explain the terms acidimetry and alkalimetry with suitable examples.  
(b) Discuss the theories of neutralization indicators.
4. (a) Explain the neutralization curves for a titration between strong acid and strong base. Comment upon the indicators used.  
(b) Describe the principle and procedure involved in standardization of 0.1 N HCl.
5. (a) Discuss the general principles of gravimetric analysis.  
(b) Write an account on the Oxidation – Reduction titrations and their applications in analysis.
6. (a) Discuss about various types of redox indicators with examples.  
(b) Write a note on organic precipitants used in gravimetry.
7. (a) Discuss the principles of gas analysis.  
(b) Write the principle of complexometric titration. Describe the principle and procedure involved in assay of magnesium sulphate.
8. (a) Explain the preparation and standardization of 0.1 M EDTA solution.  
(b) Write the principle involved in non-aqueous titration. Explain with examples, what type of pharmaceutical compounds is assayed by non-aqueous titration.
9. (a) Describe the mole concept and avogadro's number.  
(b) Explain the stoichiometry of ionic equations with suitable examples.  
(c) How do you calculate theoretical yield and percentage yield? Explain with an example.
10. (a) Balance the following chemical equations:
  - (i)  $\text{Na}_2\text{SO}_4 + \text{H}_2\text{O} \rightarrow \text{NaOH} + \text{H}_2\text{SO}_4$
  - (ii)  $\text{Ba}(\text{OH})_2 + \text{NaCl} \rightarrow \text{BaCl}_2 + \text{NaOH}$
  - (iii)  $\text{Fe}(\text{SO}_4)_3 + \text{HCl} \rightarrow \text{H}_2\text{SO}_4 + \text{FeCl}_3$
  - (iv)  $\text{NaCl} + \text{H}_2\text{SO}_3 \rightarrow \text{Na}_2\text{SO}_3 + \text{HCl}$  
(b) Define the terms empirical formula, molecular formula and percentage composition.

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**FACULTY OF PHARMACY**

**B. Pharmacy 2/4 II Year I Semester (NON-CBCS) (Backlog) Examination,  
November 2022**

**Subject: Pharmaceutical Engineering – I**

**Time: 3 Hours**

**Max. Marks: 70**

**Note: Answer any five questions. All questions carry equal marks.**

1. (a) Discuss the factors affecting material selection for pharmaceutical plants.  
(b) Classify and enumerate the different types of corrosion.
2. (a) Write the important properties, uses and composition of any two non-ferrous metals used in pharmaceutical industry.  
(b) Give a brief account of the properties and uses of the different groups of stainless steels.
3. (a) Explain the concept of surface coefficients in the transfer of heat by forced convection.  
(b) Write a detailed note on steam traps.
4. (a) Compare orifice meter with a venture meter.  
(b) Write a note on flow meters and rotameter.
5. (a) Explain briefly the vacuum pumps and jet pumps.  
(b) Give a note on joints and valves.
6. (a) Describe the construction, working and pharmaceutical applications of pneumatic conveyer.  
(b) Enlist the equipment used for transportation of gases. Add a note on Blowers.
7. (a) Explain the importance of refrigeration in pharmacy with suitable examples.  
(b) Explain the methods available for humidification and Dehumidification.
8. (a) List out the various refrigerants. Give their characteristics, advantages, disadvantages and applications.  
(b) Discuss the various methods available for determination of Humidity.
9. (a) Write a note on meta filter.  
(b) Give the construction, working and uses of non-perforated basket centrifuge.
10. (a) Enlist the equipment used for air filtration. Describe in detail about electro static precipitator.  
(b) Write the construction, working and uses of continuous centrifuge.

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Code No: E-12051/Non-CBCS

**FACULTY OF PHARMACY**

**B. Pharmacy 2/4 II-Year I-Semester (Non-CBCS) (Backlog) Examination,  
October / November 2022**

**Subject: Pharmaceutical Organic Chemistry – I**

**Time: 3 Hours**

**Max. Marks: 70**

**Note: Answer any five questions.**

**(5 x 14 = 70 Marks)**

- (a) What is Hybridization. Discuss the different types of hybridization with suitable examples.

(b) Define the terms with examples 1) Melting point 2) Solubility.
- Explain the terms with examples electrometric, inductive effect, Resonance.
- (a) Explain markonikov's and anti-markovnikov's addition of alkenes with mechanism.

(b) Write any three methods of preparation of alkenes.
- Write any three methods of preparation of cyclo alkanes. Explain Bayer's strain Theory.
- (a) Give any three methods of preparation of alcohols.

(b) Discuss SN1 and SN2 reactions with mechanism and stereo chemistry.
- Discuss a) Dehydration of alcohols, b) Williamson ether synthesis, c) Zeisel's method.
- (a) Write any three methods of preparation of aldehydes and Ketones.

(b) Explain Aldol condensation.
- (a) Discuss the reactivity and synthetic applications of acetoacetic ester.

(b) Write any three methods of preparation of carboxylic acids.
- (a) Write about the basicity of amines.

(b) How do you differentiate between primary secondary and tertiary amines?
- (a) Write any three methods of preparation of nitro alkanes.

(b) Write the synthesis and applications of aryl diazonium salts.

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**FACULTY OF PHARMACY**

**B. Pharmacy 2/4, I – Semester (NON-CBCS) (Backlog) Examination,  
February / March 2022**

**Subject: Communicative English**

**Time: 3 Hours**

**Max. Marks: 70**

**Note: Answer any five questions.**

**(5 x 14 = 70 Marks)**

1. (a) Explain the importance and process of communication?  
(b) Explain the procedure to conduct a seminar?
2. Write short notes on the following:  
(a) Importance of Body language in Communication.  
(b) Do's and Don'ts of a Group Discussion.
3. (a) Explain the structure of a Scientific Report?  
(b) How to improve Reading comprehension Skills?
4. (1) Give a synonym of the following  
(a) Impeccable (b) Anguish (c) Timid (d) Ignorance  
(2) Give an antonym for the following  
(a) Aversion (b) Bias (c) Berate (d) Exhaustive  
(3) Explain the one word substitute in one or two sentences.  
(a) Panacea (b) Gourmet (c) Pseudonym (d) Misanthrope (e) Rejuvenate  
(4) Rewrite the sentences as directed:  
(a) He is \_\_\_\_\_ Ethiopian (Insert an article)  
(b) I Know I \_\_\_\_\_ (leave) no stone unturned to pass the CAT exam  
(Use the correct for of verb).  
(c) Our professor congratulated us on our victory (change into passive voice).  
(d) They discussed about the newly introduced drug (Correct the mistake).
5. (a) Explain the barriers to communication?  
(b) Discuss the communication mediums?
6. (a) What are the uses of a Thesaurus?  
(b) Draft a letter of complaint to the Inspector of police about the theft of your bike?
7. (a) Explain the types of listening?  
(b) Discuss a few differences between British and American English?

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8. (a) Explain the role of wit and humour in communication?  
(b) Write in paragraph in about 150 words on the statement "Health is wealth"?
9. (a) How does Swami Vivekananda explain "The Secret of Work"?  
(b) According to Benjamin Spock, how do children react in adolescence?
10. (a) How did Carnegie's "Gospel of Wealth" influence the modern World?  
(b) What are C.E.M. Joad's views on Democracy and Civilization?

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**FACULTY OF PHARMACY**  
**B. Pharmacy 2/4 I –Semester (NON- CBCS) (Backlog) Examination,**  
**February / March 2022**

**Subject: Pharmaceutical Microbiology**

**Time: 3 Hours**

**Max. Marks: 70**

**Note: Answer any five questions.**

**(5 x 14 = 70 Marks)**

1. (a) Discuss the classification of microorganisms.  
(b) Explain in detail about preservation of pure cultures.
2. (a) Explain different methods of bacterial count.  
(b) Discuss Nutrition requirements of bacteria.
3. (a) Explain in detail about replication of bacterial viruses.  
(b) What are mutations? Write the types mutations. Explain isolation of mutants.
4. (a) Define growth. Explain different phases of growth in bacteria.  
(b) Describe the stages involved in acid fast staining.
5. (a) Explain different groups of disinfectants with mechanism of action.  
(b) Explain about sterilization indicators.
6. (a) Explain in detail about heat and radiation sterilization.  
(b) Explain factors influencing disinfectants.
7. Describe Immune response and Humoral Immunity.
8. Explain in detail about serological reactions.
9. (a) Write the symptoms of diphtheria and polio.  
(b) Write the causative organism, mode of transmission, pathophysiology of Tuberculosis.
10. (a) Describe the features of E.coli and its role in disease development  
(b) Write about the microbiology of milk.

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**FACULTY OF PHARMACY**

**B. Pharmacy 2/4 I Semester (Non-CBCS) (Backlog) Examination,  
February / March 2022**

**Subject: Pharmaceutical Analysis – I (Chemical Analysis)**

**Time: 3 Hours**

**Max. Marks: 70**

**Note: Answer any five questions.**

**(5 x 14 = 70 Marks)**

- 1 (a) Define primary, secondary standards write their properties with examples.  
(b) Define the following terms;  
(i) Accuracy (ii) Precision (iii) Equivalence point.
- 2 (a) Discuss the significant figure and rules for computation.  
(b) Explain calibration procedure of volumetric flask.
- 3 (a) Discuss the theory of indicators.  
(b) Write a note on the following;  
(i) Solubility Product (ii) pH.
- 4 (a) Write a note on Common Ion effect.  
(b) What are buffers, how they are prepared and explain their mechanism of action?
- 5 (a) Write a note on redox indicators.  
(b) Write the methods involved in the precipitation titrations. Explain one method in detail.
- 6 (a) Explain the principle of gravimetric analysis and mention its applications.  
(b) Write note on the following;  
(i) Co-Precipitation (ii) Digestion.
- 7 (a) Write the theory and applications of Iodometry.  
(b) How do you prepare and standardize 0.1 KMnO<sub>4</sub>.
- 8 (a) Write a brief account on the principles of gas analysis.  
(b) Discuss the types solvents and indicators used in the non aqueous titrations.
- 9 (a) Define empirical formula, molecular formula, theoretical yield and percentage yield.  
(b) Write the mass balance equation for the following:  
(a)  $\text{NH}_4\text{OH} + \text{H}_2\text{SO}_4 \rightarrow (\text{NH}_4)_2 \text{SO}_4 + \text{H}_2\text{O}$   
(b)  $\text{CaCl}_2 + \text{NaNO}_3 \rightarrow \text{Ca}(\text{NO}_3)_2 + \text{NaCl}$   
(c)  $\text{C}_6\text{H}_{12}\text{O}_6 + \text{H}_2\text{SO}_4 \rightarrow \text{C}_2\text{H}_5\text{OH} + \text{CO}_2$ .
- 10 (a) How many moles of glucose are present in 540 gm of glucose.  
(b) Describe mole concept and avogadro's number.
- 11 Calculated the percentage composition of elements in Na<sub>2</sub>SO<sub>4</sub>.

**FACULTY OF PHARMACY**

**B. Pharmacy 2/4 - I –Semester (NON-CBCS) (Backlog) Examination,  
February / March 2022**

**Subject: Pharmaceutical Engineering -I**

**Time: 3 Hours**

**Max. Marks: 70**

**Note: Answer any five questions.**

**(5 x 14 = 70 Marks)**

1. (a) Write a note on Glass as material of construction in Pharmaceutical industry.  
(b) Write a note on theories of corrosion.
2. (a) Write the important properties, uses and composition of any two non-ferrous metals used in pharmaceutical industry.  
(b) Discuss the factors affecting material selection for pharmaceutical plants.
3. (a) Derive and explain Bernoulli's theorem.  
(b) Explain Stefan-Boltzmann law of thermal radiation.
4. (a) Describe the construction, advantages and disadvantages of any one heat exchanger.  
(b) Describe the construction and working of parallel and counter current flow.
5. (a) Explain the construction and working of Diaphragm valve and Globe valve.  
(b) Explain briefly the reciprocating pump theory.
6. (a) Describe the construction, working and pharmaceutical applications of Belt conveyor.  
(b) Enlist the equipment used for transportation of gases. Add a note on Fans.
7. (a) What is air conditioning? With a neat diagram describe a simple air conditioning unit.  
(b) Explain the methods available for humidification and Dehumidification.
8. (a) What are cooling towers? Explain their design and working.  
(b) Describe the principle and working of Absorption refrigeration system.
9. (a) Write a note on plate and frame filter.  
(b) Give the construction, working and uses of perforated basket centrifuge.
10. (a) What are the applications of filtration in pharmacy? Add a note on mechanism of filtration.  
(b) Write the construction, working and uses of horizontal centrifuge.

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**FACULTY OF PHARMACY**  
**B. Pharmacy 2/4 I –Semester (NON- CBCS) (Backlog) Examination,**  
**February/March 2022**

**Subject: Pharmaceutical Organic Chemistry –I**

**Time: 3 Hours**

**Max. Marks: 70**

**Note: Answer any five questions.**

**(5 x 14 = 70 Marks)**

1. Discuss the following with suitable examples  
1) Solubility    2) Hybridization  
3) Bond angle    4) Dipole moment.
2. (a) What is isomerism? Explain structural and spatial isomerism with examples.  
(b) Explain the terms with examples electrometric and inductive effect.
3. (a) Write any three methods of preparation of alkanes.  
(b) Discuss the free radical mechanism for the chlorination of Methane.
4. (a) Write a note on conformations of cyclohexane and discuss the importance of Bayer's strain theory.  
(b) Add a note on cis-trans isomerism.
5. (a) Explain E1 and E2 elimination reactions with mechanism.  
(b) How do you distinguish between primary, secondary and tertiary alcohols with different chemical reagents?
6. (a) Discuss SN1 and SN2 reactions with mechanism.  
(b) Write any three methods of preparation of alkyl halides.
7. (a) Write the general reactions of carbonyl compounds.  
(b) Give the reaction and mechanism of Aldol condensation.
8. (a) Discuss the reactivity and synthetic applications of Acetoacetic ester.  
(b) Explain in detail the acidity of carboxylic acids with examples.
9. (a) Give the reactions of amines.  
(b) Write any three methods of preparation of nitro alkanes.
10. Discuss (a) Hinsberg separation of amines.  
(b) Synthesis and applications of aryl diazonium salts.

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FACULTY OF PHARMACY  
B. Pharmacy 2/4 I Semester (Non-CBCS) (Backlog) Examination,  
September 2021

Subject: Pharmaceutical Organic Chemistry - I

Time: 2 Hours

Max. Marks: 70

Note: Answer any four questions.

(4 x 17<sup>1/2</sup> = 70 Marks)

- (a) What is isomerism? Explain structural and spatial isomerism with examples.  
(b) Add a note on polarity of molecules and dipole moments.
- (a) What is activation energy? Explain the energy diagram of reactants and products during reaction.  
(b) Explain the terms with examples electrometric and inductive effect.
- (a) Explain the stability of cycloalkanes by different theories.  
(b) Write any four general methods of preparation of alkanes.
- (a) Discuss the free radical mechanism for the chlorination of methane.  
(b) Write any four methods of preparation of alkynes.
- (a) Explain E<sup>1</sup> and E<sup>2</sup> elimination reactions with mechanism.  
(b) How do you distinguish between primary, secondary and tertiary alcohols with different chemical reagents?
- (a) Give any four methods of preparation of alcohols.  
(b) Write any four methods of preparation of alkyl halides.
- (a) Write the general reactions of carbonyl compounds.  
(b) Explain in detail the acidity of carboxylic acids with examples.
- (a) Discuss the reactivity and synthetic applications of acetoacetic ester.  
(b) Write any four methods of preparation of carboxylic acids.
- (a) Give the reactions of amines.  
(b) Write the synthesis and applications of aryl diazonium salts.
- (a) Write any four methods of synthesis of nitro alkanes.  
(B) Give the Hinsberg's method of separation of amines.

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**FACULTY OF PHARMACY**

**B.Pharmacy 2/4 - I- Semester (Non-CBCS) (Backlog) Examination, September 2021**

**Subject: Pharmaceutical Microbiology**

**Time: 2 Hours**

**Max. Marks: 70**

**Note: Answer any four questions.**

**(4 x 17<sup>1/2</sup> = 70 Marks)**

- 1 (a) Explain in detail about morphology of typical bacteria with neat labelled diagram.  
(b) Explain different methods of bacterial count.
- 2 (a) Explain Nutritional requirements of bacteria with examples.  
(b) Explain cultivation of aerobic and anaerobic bacteria.
- 3 (a) Define stain. Write types of Stains. Explain principle and procedure of Gram staining technique.  
(b) What are mutations? Write the types mutations. Explain isolation of mutants.
- 4 (a) Define growth. Explain different phases of growth in bacteria.  
(b) Explain synchronous growth.
- 5 (a) Explain in detail about heat and radiation sterilization.  
(b) Explain about sterilization indicators.
- 6 (a) Explain different groups of disinfectants with mechanism of action.  
(b) Explain about sterilization of premises.
- 7 (a) Explain about humoral immunity and cell mediated immunity.  
(b) What are toxins? Types of toxins and explain in detail types of toxins.
- 8 (a) Explain about phagocytosis with neat labelled diagram.  
(b) Describe precipitation reactions and their applications.
- 9 (a) Write the causative organism, mode of transmission, pathophysiology, symptoms, diagnosis, treatment and prevention of typhoid fever.  
(b) What is epidemic, endemic and pandemic?
- 10 (a) Write the causative organism, mode of transmission, pathophysiology of Tuberculosis.  
(b) Explain the principle of Indole production test.

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**FACULTY OF PHARMACY**  
**B. Pharmacy 2/4 I Semester (Non-CBCS) (Backlog) Examination,**  
**September 2021**

**Subject: Pharmaceutical Analysis – I (Chemical Analysis)**

**Time: 2 Hours**

**Max. Marks: 70**

**Note: Answer any four questions.**

**(4 x 17 <sup>1/2</sup> = 70 Marks)**

1. (a) Define the term error. Discuss the various types of errors and write a note on the calibration of errors.  
(b) Describe the different methods of expressing the concentration of solutions.
2. (a) Define the following terms.  
(i) Significant figure (ii) Accuracy (iii) Linearity (iv) end point.  
(b) What is meant by calibration and write the procedure for the calibration of burette.
3. (a) Discuss the theory of indicators.  
(b) Write a note on different theories of acids and bases.
4. (a) What are buffers, how they are prepared and explain their mechanism of action?  
(b) Write the preparation and standardization of 0.1N NaOH.
5. (a) Explain the co-precipitation and post precipitation with examples.  
(b) Write the Mohr's methods for the determination of chlorides.
6. (a) Write a note on redox indicators.  
(b) Describe the principle involved in complexometric titration. Write a short note on PM indicators.
7. (a) Write the principle, advantages and application of non-aqueous titrations.  
(b) Discuss the principle, procedure and apparatus used in the assay of Oxygen.
8. (a) Explain Iodometry and Iodimetry.  
(b) How do you prepare and standardize 0.1N HClO<sub>4</sub>.
9. (a) Define the terms:  
(i) Molecular formula (ii) Empirical formula.  
(b) Balance the following equations:  
(i)  $\text{Na}_2\text{SO}_4 + \text{H}_2\text{O} \rightarrow \text{NaOH} + \text{H}_2\text{SO}_4$ .
10. (a) Describe mole concept and Avogadro's number.  
(b) Calculate the percentage composition of elements in Na<sub>2</sub>SO<sub>4</sub>.

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## FACULTY OF PHARMACY

B.Pharmacy 2/4 I Semester (Non-CBCS) (Backlog) Examination, March 2021

Subject: Pharmaceutical Organic Chemistry-I

Time: 2 Hours

Max. Marks: 70

Note: Answer any four questions.

(4 x 17 ½ = 70 Marks)

- 1 a) Discuss the following with suitable examples.  
1) Solubility 2) Resonance 3) Covalent bond 4) Intermolecular forces
- 2 a) What is hybridization. Discuss the different types of hybridization with suitable examples.  
b) Define the terms with examples.  
1) Inter molecular forces 2) Bond angles
- 3 a) Explain the following.  
1) Sachse-mohr theory 2) Baeyers strain theory 3) Cis-trans isomerism
- 4 a) Explain markonikovs and anti-markovnikovs addition of alkanes with mechanism.  
b) Write any four methods of preparation of alkenes.
- 5 a) Discuss SN<sup>1</sup> and SN<sup>2</sup> reactions with mechanism and stereo chemistry.  
b) Write the mechanism of dehydration of alcohols.
- 6 a) Add a note on walden inversion.  
b) Write any five methods of preparation of alkyl halides.
- 7 a) Give the mechanisms for the following.  
1) Aldol condensation 2) Haloform reaction 3) Wittig reaction.  
b) Write any four nucleophilic addition reactions of carbonyl compounds.
- 8 a) Explain in detail the acidity of carboxylic acids with examples.  
b) Write the synthetic applications of diethyl malonate and ethyl aceto acetate.
- 9 a) Write about the basicity of amines.  
b) How do you differentiate between primary secondary and tertiary amines?  
c) Write a note on aryl diazonium salts.
- 10 a) Write any three methods of preparation of nitro alkanes.  
b) Write the synthesis and applications of aryl diazonium salts.

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**FACULTY OF PHARMACY**

**B. Pharmacy 2/4 I-Semester (Non-CBCS) (Backlog) Examination, March 2021**

**Subject : Communicative English**

**Time: 2 Hours**

**Max. Marks: 70**

**Note: Answer any Four Questions**

**(4 x 17<sup>1/2</sup> = 70 Marks)**

- 1 a) What are the features of human communication  
b) Interpersonal communication is an important area of communication. Explain
- 2 a) How to make the communication effective by overcoming the barriers of communication  
b) What is the role of body language in oral communication.
- 3 a) What are the ways to introduce oneself & others.  
b) Explain the use of thesaurus in building your vocabulary.
- 4 a) What is the importance of evaluating and organizing the collected information for presentation  
b) Write the do's & don't s in an interview
- 5 a) Write a short paragraph on "Prevention is better than cure"  
b) Draft a Job application for the role of analyst in the QA department in a pharmaceutical company
- 6 a) Draft a scientific / technical report  
b) What are the necessary precautions to be taken before and at the time of delivering a speech
- 7 a) List some techniques to improve listening ability  
b) Discuss the types and methods of learning and listening
- 8 a) Give the synonyms for the following  
1) Fictitious (2) Incessantly (3) Anguish (4) Ingenious  
b) Give the antonyms for the following  
1) Generous (2) Reluctant (3) Resistible (4) Timid  
c) Explain the following one word substitutes in one or two sentences  
1) Invalid (2) Amateur (3) Atheist (4) Rewrite as directed  
1) I was amazed ----- his dance performance (Insert preposition)  
2) The trial ----- (go) on for two years (use the correct join for verb)  
3) He asked me where I had kept my bag (Change into direct speech)
- 9 a) Write the summary of 'The Generation gap' in your own words.  
b) What did Andrew Carnegie learn from his parents
- 10 a) When will misery come to an end  
d) Elaborate EEM Joad's views on defects of 'our civilization'.

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**FACULTY OF PHARMACY**

**B. Pharmacy 2/4 I-Semester (NON-CBCS) (Backlog) Examination, March 2021**

**Subject: Pharmaceutical Microbiology**

**Time: 2 Hours**

**Max. Marks: 70**

**Note: Answer any four questions.**

**(4 x 17 ½ = 70 Marks)**

1. (a) Distinguish between autotrophs and heterotrophs.  
(b) Describe nutritional requirements of bacteria.
2. (a) Explain Koch's postulates and Germ theory of disease.  
(b) Explain about Electron and Fluorescence microscopy.
3. Write in detail about recombination in bacteria.
4. Explain in detail about replication of bacterial viruses.
5. What is Phenol Coefficient test? Explain in detail about suspension tests.
6. What are sterilization indicators? Explain the type in detail.
7. Chemical nature of antigens and antibodies. Explain different types of antibodies.
8. Write about Phagocytosis and complement system.
9. Write in detail about causative organism, Mode of transmission, pathogenesis, symptoms, diagnosis, treatment, prevention and control of Poliomyelitis and Influenza.
10. Write in detail about microbiology of milk.

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## FACULTY OF PHARMACY

## B. Pharmacy 2/4 I-Semester (Non-CBCS)(Backlog) Examination, March 2021

## Subject : Pharmaceutical Analysis – I (Chemical Analysis)

Time : 2 Hours

Max. Marks: 70

**Note: Answer any four questions.****(4 x 17 ½ =70 Marks)**

- 1 (a) What is primary standard and secondary standard? Give examples. Write the ideal requirements of primary standard.  
(b) What are significant figures? Write the rules for computation.
- 2 (a) Discuss the various methods of expressing concentration.  
(b) Write notes on statistical treatment of analytical data.
- 3 (a) Explain the neutralization curve for a titration between strong acid and weak base. Comment upon indicators used in the above titration  
(b) Write the following:
  - (i) Chemical equilibrium
  - (ii) Electrolytic dissociation
- 4 (a) Define pH. Write the Henderson-Hasselbalch equation for the calculation of pH.  
(d) Derive the equation used to calculate the pH of salt solution obtained from weak acid and weak base.
- 5 (a) Discuss the various types of indicators used in oxidation – reduction titration.  
(b) Write notes on the following:
  - (i) Co-precipitation
  - (ii) Post precipitation
- 6 (a) Discuss the principle and various steps involved in gravimetric analysis.  
(b) Explain the principles of oxidation-reduction titration.
- 7 (a) Discuss the theory and applications of complexometric titrations.  
(b) Write the procedure for preparation and standardization of disodium edetate.  
(c) Write notes on various types of non-aqueous solvents.
- 8 (a) Explain the principle of non-aqueous titrations. Write the steps involved in preparation and standardization of 0.1N perchloric acid.  
(b) Describe the determination of hardness of water by complexometry.
- 9 (a) Calculate the pH of a buffer solution containing 0.01 M acetic acid and 0.05 M potassium acetate.  $K_a$  of acetic acid  $1.76 \times 10^{-5}$ .  
(b) Calculate the amount of sodium oxalate required to prepare 500 ml of 0.1 N solution. Molecular weight of sodium oxalate = 134.  
(c) Balance the following chemical equations.
  - (A)  $\text{BaCl}_2 + \text{NaOH} \rightarrow \text{Ba(OH)}_2 + \text{NaCl}$
  - (B)  $\text{H}_2\text{SO}_4 + \text{FeCl}_3 \rightarrow \text{Fe(SO}_4)_3 + \text{HCl}$
- 10 (a) How do you calculate theoretical yield and percentage yield? Explain with an example.  
(b) Derive the equivalent weight of potassium dichromate in the following reaction by hypothetical method.  
(c) How much water is to be added to a 250 ml solution of 0.25 N HCl to make it 0.1 N solution?

**FACULTY OF PHARMACY**

**B. Pharmacy 2/4 I-Semester (Non-CBCS)(Backlog) Examination, March 2021**

**Subject: Pharmaceutical Engineering – I**

**Time: 2 Hours**

**Max. Marks: 70**

**Note: Answer any four questions.**

**(4x17½= 70 Marks)**

- 1 (a) Write a note on Glass as material of construction in Pharmaceutical industry.  
(b) Discuss the factors to be considered in the selection of materials for pharmaceutical plant construction.
- 2 (a) Describe the different methods for prevention and control of corrosion.  
(b) Explain dimensional formulas and dimensionless equations with suitable examples.
- 3 (a) Discuss various methods used for the measurement of flow of fluids in brief.  
(b) Explain Stefan-Boltzmann law of thermal radiation.
- 4 (a) With a neat sketch, describe the design and operation of any one type of reciprocating pump.  
(b) Write a note on: (i) Steam trap (ii) condensers.
- 5 (a) With neat sketches, describe the construction and working of Diaphragm valve and Globe valve.  
(b) Describe the design and working of different types of fans used for the transportation of gases.
- 6 (a) Describe the construction, working and pharmaceutical applications of screw conveyor.  
(b) Compare reciprocating pumps with centrifugal pump.
- 7 (a) Discuss in detail about absorption refrigeration cycle with a neat sketch.  
(b) Explain the methods available for humidification and Dehumidification.
- 8 (a) Write a note on Adiabatic saturation temperature and Wet bulb temperature.  
(b) Explain the importance of refrigeration in pharmacy with suitable examples.
- 9 (a) Write Kozeny equation for filtration and its limitations.  
(b) Write a note on membrane filtration and its applications in pharmaceutical industries.
- 10 (a) Write the theory involved in centrifugation with its applications in pharmacy.  
(b) Discuss the construction and working of a perforated basket centrifuge.

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**FACULTY OF PHARMACY**

**B. Pharmacy 2/4 I-Semester (Non-CBCS)(Backlog) Examination, Oct/Nov 2020**

**Subject : Pharmaceutical Analysis – I (Chemical Analysis)**

**Time : 2 Hours**

**Max. Marks: 70**

**Note: Answer any four questions.**

**(4x17½=70 Marks)**

- 1 (a) Define the term error. Discuss the various types of errors and write a note on their rectification.  
(b) Write the procedure for the calibration of burettes.
- 2 (a) Write a detail account on computation of analytical results.  
(b) Write the procedure for calibration of volumetric flasks.
- 3 (a) Explain the various theories of acids and bases.  
(b) Write notes on the following  
(i) Solubility product (ii) Common ion effect
- 4 (a) Define the terms buffer solution, buffer action and buffer capacity. Explain the pharmaceutical importance of buffers.  
(b) Explain the theory of neutralization indicators.
- 5 (a) Write the procedure for the preparation and standardization of 0.1 N KMnO<sub>4</sub>.  
(b) Discuss the principle and procedure involved in assay of copper sulphate.  
(c) Discuss the precipitation, digestion and drying procedures of gravimetric analysis.
- 6 (a) Explain the Nernst equation. Write the application of oxidation-reduction potentials in pharmaceutical analysis.  
(b) Write the procedure for preparation and standardization of 0.1 N Iodine.  
(c) Mention a brief note on organic precipitants.
- 7 (a) Describe masking and demasking process used in complexometry.  
(b) Discuss the principle, advantages and applications of non-aqueous titration.
- 8 (a) Write the principles of gas analysis.  
(b) Explain the theory of complexometric titration. Write the principle and procedure involved in calcium gluconate.
- 9(a) 20.1 ml of 0.2 N NaOH is added to 20 ml of 0.2 N acetic acid. Calculate pH of the resultant solution (taking the volume change into account).  
(b) What volume of 0.125 N reagent is required to prepare 1000 ml of 0.1 N solution?  
(c) Find the percent composition of element calcium in calcium hydroxide.
- 10 (a) How many milliliters of 2N HNO<sub>3</sub> solution should be taken for the preparation of 1000 ml of 0.1 N solution?  
(b) Calculate the pH change in the titration of 100 ml of 1 N HCl with 50 ml of 1N NaOH.  
(c) Find the percent composition of each element in water.

**FACULTY OF PHARMACY**

**B. Pharmacy 2/4 I -Semester (Non-CBCS) (Backlog) Examination, October 2020**  
**Subject: Pharmaceutical Engineering - I**

**Time: 2 Hours**

**Max. Marks: 70**

**Note: Answer any four questions.**

**(4x17½=70 Marks)**

1. (a) Write the important properties, uses and composition of any two non-ferrous metals used in pharmaceutical industry.  
(b) Discuss the factors affecting material selection for pharmaceutical plants.
2. (a) Explain dimensional formulas and dimensionless equations with suitable examples.  
(b) Classify and enumerate the different types of corrosion.
3. (a) Compare orifice meter with a venture meter.  
(b) Describe the construction, advantages and disadvantages of any one heat exchanger.
4. (a) Write a detailed note on condensers.  
(b) Explain Stefan-Boltzman law of thermal radiation.
5. (a) Explain briefly the reciprocating pump theory.  
(b) Describe the design and working of different types of fans used for the transportation of gases.
6. (a) With neat sketches, describe the construction and working of Diaphragm valve and globe valve.  
(b) Explain the construction, working of different types of fans used for the transportation of gases.
7. (a) Describe the construction and working of Air condition with neat labeled diagram.  
(b) Explain the methods available for humidification and Dehumidification.
8. (a) Explain the importance of refrigeration in pharmacy with suitable examples.  
(b) What are cooling towers? Explain their design and working.
9. (a) Write a note on plate and frame filter.  
(b) Give the construction, working and uses of horizontal centrifuge.
- 10 (a) Describe in detail about any one filtration equipment.  
(b) Discuss the construction and working of a perforated basket centrifuge.

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**FACULTY OF PHARMACY**

**B. Pharmacy 2/4 – I Semester (Non-CBCS) (Supplementary) Examination,  
October 2020**

**Subject: Pharmaceutical Organic Chemistry - I**

**Time: 2 Hours**

**Max. Marks: 70**

**Note: Answer any four questions.**

**(4x17½=70 Marks)**

- 1 Discuss the following terms with suitable examples.
  - (i) Different types of Covalent bonds.
  - (ii) Polarity of molecules.
  - (iii) Solubility.
  
- 2 (a) Explain the energy diagrams of reactants and products during the course of reaction.  
(b) Write a note on the following:
  - (i) Hybridization (ii) Meltingpoint (iii) Boiling point.
  
- 3 (a) Explain the Markonikovs and antimarkonikovi addition with examples.  
(b) Discuss the importance of Bayers strain theory.
  
- 4 (a) Write the general methods of preparation of alkenes.  
(b) Discuss the free radical mechanism for the chlorination of Methane.
  
- 5 (a) Discuss in detail the mechanism and stereo chemistry involved in SN<sup>1</sup> and SN<sup>2</sup> reactions.
  
- 6 (a) Write the difference between Nucleophilic substitution Vs Elimination.  
(b) Give any five methods of preparation of alkyl halides.
  
- 7 (a) Write any four methods of preparation of aldehydes and Ketones.  
(b) Give the reaction and mechanism of Aldol condensation and Haloform reaction.
  
- 8 (a) Discuss the reactivity and synthetic applications of Acetoacetic ester.  
(b) How do you synthesize the Schiff's bases.
  
- 9 (a) Explain the following reactions with their significances.
  - (i) Hinsberg's method (ii) Sand Meyer's reaction.  
(b) Give any three methods to prepare Nitroalkanes.
  
- 10 (a) Write the reaction and mechanism of coupling reaction and Gatterman reaction.  
(b) Explain the chemical reactions of Amines.

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**FACULTY OF PHARMACY**

**B. Pharmacy 4/4 I - Semester (Non-CBCS) (Backlog) Examination,  
November 2020**

**Subject: Pharmaceutical Business Management**

**Time: 2 Hours**

**Max. Marks: 70**

**Note: Answer any four questions.**

**( 4 x 17<sup>1/2</sup>=70Marks)**

1. Describe cGMP requirements of building, equipment, quality audit and documentation.
2. Describe management information systems, decision support system and executive information systems along with their importance in information management.
3. Describe the linear and modular layouts along their merits and demerits with help of diagrams.
4. Explain the provision of change room and aseptic area of parenteral production with help of diagrams.
5. Explain the concepts of Economic order quantity and ABC analysis in stores management.
6. Describe procedures involved in receiving, inspection, storage and control of stock in stores organization.
7. Describe the Hawthorne experiments and mention their significance in Industrial psychology.
8. (a) Describe Maslow's theory of motivation.  
(b) Explain training approaches and their role on performance of personnel.
9. Describe the factors affecting pricing and write the concepts of skim the cream pricing, premium pricing and discount pricing.
10. Describe the life cycle of product and mention the sales promotion approaches at different stages.

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**FACULTY OF PHARMACY**

**B. Pharmacy 2/4 I-Semester (NON-CBCS) (Backlog)**

**Examination, November 2020**

**Subject: Pharmaceutical Microbiology**

**Time: 2 Hours**

**Max. Marks: 70**

**Note: Answer any Four questions.**

**(4X17 ½= 70 Marks)**

1. a) Write in detail about cultivation of aerobic and anaerobic bacteria.  
b) Explain in detail about Bright field and Dark field microscopy.
2. Explain in detail about isolation and enumeration of bacteria.
3. What are mutations? Types of mutations? Explain different repair mechanisms in bacteria.
4. Write the difference between simple staining and negative staining. Explain in detail about Acid fast staining.
5. Define Disinfectant, Antiseptic, Inhibitor, Bacteriostatic, Explain about control of microorganisms by chemical methods.
6. What is sterilization? Explain in detail about Tantalization, Pasteurization and Incineration.
7. What are serological reactions? Explain in detail about precipitation and agglutination reactions.
8. Explain about Humoral and cell mediated immunity.
9. Write in detail about Causative organism, Mode of transmission, pathogenesis, symptoms, diagnosis, treatment, prevention and control of Tuberculosis and Pertusis.
10. Write the systematic study of E.coli.

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**FACULTY OF PHARMACY**

**B. Pharmacy 2/4 I-Sem. (Non-CBCS) (Backlog) Examination, August 2019**

**Subject: Pharmaceutical Microbiology**

**Time: 3 Hours**

**Max. Marks: 70**

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

1. (a) Write about brightfield microscopy.  
(b) Describe nutritional requirements of bacteria.

**OR**

2. Describe morphology of a typical bacterium.

3. Write in detail about recombination in bacteria.

**OR**

4. What is growth? Explain the growth phases of bacteria.

5. Explain in detail about Rideal-walker test and chick martin test.

**OR**

6. Define Disinfectant, Antiseptic, Inhibitor, Bacteriostat. Write about factors influencing disinfection.

7. Discuss chemical nature of antigens and antibodies. Explain different types of antibodies.

**OR**

8. Write about Phagocytosis and complement system.

9. Write in detail about causative organism, Mode of transmission, pathogenesis, symptoms, diagnosis, treatment, prevention and control of Poliomyelitis and Influenza.

**OR**

10. Write in detail about microbiology of milk.

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## FACULTY OF PHARMACY

## B. Pharmacy 2/4 I-Sem. (Non-CBCS) (Backlog) Examination, July 2019

Subject: Pharmaceutical Analysis – I (Chemical Analysis)

Time: 3 Hours

Max. Marks: 70

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

1. (a) Define the following general terms used in titrimetry. 4  
(A) Titrant (B) Analant (C) Equivalence point (D) Indicator
  - (b) Explain the statistical treatment of analytical data 10
- OR**
2. (a) Discuss the methods of expressing concentration. 9
  - (b) Describe the procedure for calibration of graduated flask. 5
3. (a) Explain the theories of neutralization indicators. 6
  - (b) Describe the neutralization titration between weak base and strong acid. Write a note on the selection of indicators used in this type of titration using its titration curve. 6+2
- OR**
4. (a) Explain the following 3+3  
(A) Chemical equilibrium (B) Law of mass action.
  - (b) Define the term buffer solution and buffer capacity. Discuss the pharmaceutical importance of buffers. 2+6
5. (a) Explain the principle involved in oxidation-reduction titration. 4
  - (b) Write the procedure for the standardization of 0.1 M  $\text{KMnO}_4$ . 4
  - (c) Write a note on adsorption indicators. 6
- OR**
6. (a) Explain the typical methods involving precipitation, coagulation and digestion in gravimetric analysis. 6
  - (b) Explain the Volhards method in detail. 8
7. (a) Write the method of preparation and standardization of 0.05 M disodium edelate. 6
  - (b) Discuss the determination of percentage of potassium iodide by titration with potassium iodate. 8
- OR**
8. (a) Explain the principle of non-aqueous titration. Mention its advantage over the aqueous titration. Discuss the various solvents used in non-aqueous titration. 3+2+4
  - (b) Write a brief note on principles of gas analysis. 5
9. (a) Calculate the percentage composition of element in the following 4+4  
(A)  $\text{Na}_2\text{S}_2\text{O}_3$  (B)  $\text{Na}_2\text{CO}_3$
  - (b) Calculate the weight of Barium chloride required to produce 0.5g of Silver Chloride (Ba=137, Ag=108, Cl=35.5)
  - (c) Explain (i) Empirical Formula (ii) Molecular Formula (iii) Percentage composition. 6
- OR**
10. (a) Define the terms limiting reactant, theoretical yield and percentage yield. 6
  - (b) What is avogadro's number? Explain how the moles of elements calculate. 8

**FACULTY OF PHARMACY****B. Pharmacy 2/4 I-Semester (Non CBCS) (Backlog) Examination, July 2019****Subject : Pharmaceutical Engineering - I****Time : 3 Hours****Max. Marks: 70****Note: Answer All questions, All Questions carry equal marks.**

- 1 a) Give a brief account of the properties and uses of the different groups of stainless steels. 7M  
b) Write a note on theories of corrosion. 7M
- OR**
- 2 a) Define the following:  
i) Unit operations ii) Unit processes iii) Steady and Unsteady States. 6M  
b) Describe briefly the different ways of combating corrosion. 8M
- 3 a) Derive and explain Bernoulli's theorem. 7M  
b) Explain the concept of surface coefficients in the transfer of heat by forced convection. 7M
- OR**
- 4 a) Write a detailed note on condensers. 7M  
b) Describe the construction and working of parallel and counter current flow. 7M
- 5 a) With a neat sketch describe the construction, working, uses and application of belt conveyor. 7M  
b) Explain briefly the reciprocating pump theory. 7M
- OR**
- 6 a) Describe the construction, working and uses of i) Diaphragm pump ii) Ejectors. 7M  
b) Enlist the equipment used for transportation of gases. Add a note on Fans. 7M
- 7 a) What is air conditioning? With a neat diagram describe a simple air conditioning unit. 7M  
b) List out the various refrigerants. Give their characteristics, advantages, disadvantages and applications. 7M
- OR**
- 8 a) Discuss the various methods available for determination of Humidity. 7M  
b) Describe the principle and working of Absorption refrigeration system. 7M
- 9 a) What are the application of filtration in pharmacy. Add a note on mechanism of filtration. 7M  
b) Discuss in detail about any one centrifuge. 7M
- OR**
- 10 a) Enlist the equipment used for air filtration. Describe in detail about electro static precipitator. 7M  
b) Describe in detail about any one filtration equipment. 7M

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## FACULTY OF PHARMACY

B. Pharmacy 2/4 I-Semester (Non-CBCS) (Backlog) Examination, July 2019

Subject : 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 suitable examples.  
1) Melting point 2) boiling point 3) Hybrid orbital 4) Solubility 3.5x4=14M
- OR**
- 2 a) Write the different types of covalent bonds.  
b) What is isomerism. Explain structural and spatial isomerism with examples. 8M
- 3 a) Give any three methods of preparation of cyclo alkanes 9M  
b) Add a note on stability of conjugated alkadienes. 5M
- OR**
- 4 c) Write the reaction and Mechanism for following reactions:  
1) Halogenations of alkenes 2) Antimarkovnikovs addition 3.5x2=7M
- 5 a) Write any three methods to prepare alcohols. 9M  
b) Explain the Mechanism of the nucleophilic substitution reactions. 5M
- OR**
- 6 a) Write any three methods for preparation of alkyl halides. 9M  
b) Write the mechanism of dehydration of alcohols. 5M
- 7 a) Write any three methods for the synthesis of carboxylic acids. 9M  
b) Write the reactivity and synthetic uses of ethyl aceto acetate. 5M
- OR**
- 8 c) Write any three methods for preparation of ketones. 9M  
b) How will you distinguish between ketones and an aldehyde with chemical reactions. 5M
- 9 a) Write any three methods for synthesis of Nitroalkanes. 9M  
b) How do you differentiate between primary secondary and tertiary amines with chemical reactions. 5M
- OR**
- 10 a) Add a note on diazotization and sandmeyer reaction. 7M  
b) Write about basicity of amines with examples. 7M

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**FACULTY OF PHARMACY**

**B. Pharmacy 2/4 I-Semester (Non-CBCS)(Backlog) Examination, August 2019**

**Subject : Communicative English**

**Time : 3 Hours**

**Max. Marks: 70**

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

**PART – A (4x5=20 Marks)**

- 1 (a) What are the various communication media?  
**OR**  
(b) Discuss the principles for effective communication.
- 2 (a) What are the do's and don'ts while participating in Group discussions?  
**OR**  
(b) How do you conduct Seminars / Conferences?
- 3 (a) How to tender apology in different ways?  
**OR**  
(b) Discuss the advantages of listening in oral / verbal communications and the skills and practices involved.
- 4 (a) Draft a Scientific / technical report.  
**OR**  
(b) Draft a letter to a publisher regarding availability of pharmacy books as a librarian of a college.

**PART – B (4x5=20 Marks)**

- 1 Give the synonym for the following:  
(a) Legacy (b) robust (c) solace (d) elicited (e) humble
- 2 Give the antonym for the following:  
(a) Fictitious (b) elegant (c) decisive (d) barbarous (e) destruction
- 3 Explain the following one word substitute in one or two sentences.  
(a) Savage (b) seamstress (c) entail (d) asylum (e) enigma
- 4 Rewrite the sentences as directed:  
(a) They paid him a handsome salary. (Change into passive voice)  
(b) My father said to me, "Don't waste your time". (Change into indirect speech)  
(c) The exercise of might is invariably an act \_\_\_\_ (Insert appropriate preposition)  
(d) He \_\_\_\_\_(fight) against ignorance, which he believed to be the root of all evil. (Use the correct form of verb).

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**PART – C (5x6=30 Marks)**

1 (a) Why is it important to set up some form of world government, according to the author?

**OR**

(b) What are the defects of our civilization in the view of C.E.M. Joad?

2 (a) Why was Carnegie a huge success as Steel King?

**OR**

(b) How did his 'Gospel of Wealth' influence the modern world?

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

**OR**

(b) According to Swami Vivekananda, how can one not be touched by sin?

4 (a) Why do some boys turn their irritation towards their mothers?

**OR**

(b) What does the author think about rebelliousness in adolescent?

5 (a) Draft a letter of application with an enclosed resume for the post of marketing executive in a pharmaceutical company.

**OR**

(b) Draft a Speech on 'Road safety measures'.

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