

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE**Regular/Supplementary Summer Examination – 2024****Course: B. Pharmacy****Semester: IV****Subject Name: Pharmaceutical Organic Chemistry-III****Subject Code: BP401T****Max Marks: 75****Date: 13-06-2024****Duration: 3 Hr.****Instructions to the Students:**

- 1. All questions are compulsory**
- 2. Draw diagrams / figures wherever necessary**
- 3. Figures to right indicate full marks**

Q.1. Objective Type Questions (Answer All the Questions) (10 X 2) = 20

- i) Define optical activity with suitable example
- ii) Give the Structure and medicinal uses of azepine
- iii) Define Meso compound with suitable example
- iv) Define Chiral and Achiral Molecule
- v) How will you obtain 2-nitro pyrrole from pyrrole?
- vi) Write down structure and medicinal uses of quinoline and imidazole
- vii) Write Paul-Knorr synthesis for pyrrole.
- viii) Define heterocyclic compound and classify them
- ix) What is E Z geometrical isomerism? Give suitable example
- x) What is Wolff-Kishner reduction reaction? Give general reaction

Q.2. Long Answers (Answer 2 out of 3) (10 X 2) = 20

- i) Explain Stereospecific and Stereoselective reactions with suitable example
- ii) What is racemic modification? Explain resolution of racemic mixture
- iii) Define Conformation. Explain in detail about conformation of ethane and n-butane.

Q.3. Short Answers (Answer 7 out of 9) (5 X 7) = 35

- i) Distinguish between enantiomerism and diastereoisomerism
- ii) Explain in detail sequence rule with suitable example
- iii) What is geometrical isomerism? Write method of determination of geometrical isomerism
- iv) Write Skraup Quinoline synthesis with any two chemical reactions
- v) Write the EAS reactions, synthesis and medicinal uses of Furan
- vi) Give the reaction and mechanism involved in Schmidt reaction
- vii) What is metal hydride reaction? Explain reaction and mechanism involved in NaBH_4
- viii) Explain elements of symmetry
- ix) Explain relative aromaticity and reactivity of Pyrrole, Furan and Thiophene

***** END OF THE PAPER *******The grid and the borders of the table will be hidden before final printing.**

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE Regular & Supplementary Summer Examination – 2024		
Course: B. Pharmacy	Semester: IV	
Subject Name: Medicinal Chemistry I	Subject Code: BP402T	
Max Marks: 75	Date: 15-06-2024	Duration: 3 Hr.
Instructions to the Students: 1. All questions are compulsory 2. Draw diagrams / figures wherever necessary 3. Figures to right indicate full marks		
Q.1.	Objective Type Questions (Answer All the Questions)	(10X2) =20
i)	Classify General anaesthetics with examples.	
ii)	Write a note on Cholinesterase reactivator.	
iii)	Describe effect of Ionization on drug action.	
iv)	Discuss alpha adrenergic antagonists with examples.	
v)	Write about partition coefficient in relation to biological action.	
vi)	Explain mechanism of action of non-narcotic anti-inflammatory agent with example.	
vii)	Give structure and mechanism of action of Neostigmine.	
viii)	Define Bio-isosters and classify with examples.	
ix)	Outline the synthesis of salbutamol	
x)	What are cholinergic receptors? How will you classify them.	
Q.2.	Long Answers (Answer 2 out of 3)	(10X2) =20
i)	What are antipsychotic agents? Write classification of antipsychotic agents with examples. Write SAR of Phenothiazines as antipsychotic agents.	
ii)	What are sympathomimetics? Elaborate on biosynthesis and metabolism pathway of Noradrenaline.	
iii)	What are Narcotic analgesics? Write a note on modifications of Morphine nucleus.	
Q.3.	Short Answers (Answer 7 out of 9)	(5 X 7) = 35
i)	Give SAR of Beta adrenergic blockers and synthesis of Propranolol.	
ii)	Write a note on Phase II Biotransformation.	
iii)	Give SAR of Cholinergic agonists.	
iv)	What are different factors affecting drug metabolism.	
v)	Write a detailed note on AChE inhibitors.	
vi)	Write SAR of Benzodiazepines as sedative and hypnotic agents.	
vii)	Explain Narcotic antagonists in detail.	
viii)	Classify anticonvulsants with examples and discuss Hydantoins as anticonvulsants.	
ix)	Classify Cholinergic blocking agents and give synthesis of dicyclomine hydrochloride.	
*** END OF THE PAPER ***		

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE		
Regular/Supplementary Summer Examination – 2024		
Course: B. Pharmacy	Semester: IV	
Subject Name: Physical Pharmaceutics II	Subject Code: BP403T	
Max Marks: 75	Date: 19-06-2024	Duration: 3 Hr.
Instructions to the Students:		
1. All questions are compulsory		
2. Draw diagrams / figures wherever necessary		
3. Figures to right indicate full marks		
Q.1.	Objective Type Questions (Answer All the Questions)	(10 X 2) = 20
i)	What is the molecularity of a reaction?	
ii)	What is a gold number? Write down their significance.	
iii)	Define following terms; a. stokes diameter b. projected diameter.	
iv)	Explain the concept of bulges.	
v)	What is dilatancy? Give the reasons for the dilatancy.	
vi)	What is the order of reaction? Enlist the factors that affect the order of reaction.	
vii)	What is the Hardy Schulze rule for colloids?	
viii)	Define suspensions and write down the ideal properties of suspensions.	
ix)	Define micromeritics write about the importance of micromeritics in pharmacy.	
x)	Why do suspensions follow the zero order and tablets follow the order of reaction?	
Q.2.	Long Answers (Answer 2 out of 3)	(10 X 2) = 20
i)	Describe the colloidal dispersion. Explain in detail the different properties of colloids	
ii)	Define the emulsion and classify it. Discuss in detail the instability of emulsions and theories of emulsions.	
iii)	Describe the different methods for determining the particle size using different methods. Discuss the advantages and disadvantages of each method for particle size determination.	
Q.3.	Short Answers (Answer 7 out of 9)	(5 X 7) = 35
i)	Derive the equation for the first order of reaction.	
ii)	Explain the different preparation and purification methods of colloids.	
iii)	Differentiate between elastic deformation and plastic deformation. Explain the heckle equation.	
iv)	List the factors that affect the viscosity of liquids. Explain a cup- and bob type viscometer.	
v)	Illustrate the distinguishing features of flocculated and deflocculated suspensions.	
vi)	Write notes on thixotropy and the measurement of thixotropy.	
vii)	Describe the flow behaviour of shear thickening and shear thinning systems.	
viii)	What is drug stability? Explain in detail about accelerated stability testing.	
ix)	Write a note about the about the spreading coefficient.	
*** END OF THE PAPER ***		

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DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE
Regular/Supplementary Summer Examination – 2024

Course: B. Pharmacy

Subject Name: Pharmacology I

Max Marks: 75

Date: 21-06-2024

Semester: IV

Subject Code: BP404T

Duration: 3 Hr.

Instructions to the Students:

1. All questions are compulsory
2. Draw diagrams / figures wherever necessary
3. Figures to right indicate full marks

Q.1. Objective Type Questions (Answer All the Questions)

(10 X 2) = 20

- i) What are different sources of drugs? Give examples?
- ii) Define agonists and antagonists.
- iii) Define the concept of addiction, dependence, drug abuse and tolerance in pharmacology
- iv) What are the routes of drug administration?
- v) Enlist opioid analgesic agonist and antagonist.
- vi) What is idiosyncrasy and allergy?
- vii) What are the mechanisms of drug action in pharmacodynamics?
- viii) Enlist the classification of receptors based on receptor theories.
- ix) Explain the concept of therapeutic index.
- x) Briefly describe the phases of clinical trials in drug discovery.

Q.2. Long Answers (Answer 2 out of 3)

(10 X 2) = 20

- i) Explain the pharmacology of sympathomimetics and Sympatholytics.
- ii) Describe the Steps of neurohumoral transmission in the central nervous system.
- iii) Write the pharmacology of Diazepam (Include definition of sedative, hypnotic, classification, Mechanism of action, pharmacokinetics, adverse effect, BZD antagonists and ,uses)

Q.3. Short Answers (Answer 7 out of 9)

(5 X 7) = 35

- i) Discuss the drugs used in Parkinson's disease
- ii) Explain in brief drug used as 1. Hallucinogen 2. Mood Stabilizer
- iii) Write a note on G- Protein coupled receptors
- iv) Describe the mechanisms of drug interactions.
- v) Explain the pharmacology of local anesthetic agents.
- vi) What are the drugs used in the treatment of glaucoma?
- vii) Discuss the pharmacology of peripherally acting muscle relaxants.
- viii) Write a note on Nootropics
- ix) Write a note on Alcohol and disulfiram.

***** END OF THE PAPER *****

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DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

Regular/Supplementary Summer Examination – 2024

Course: B. Pharmacy

Subject Name: Pharmacology I

Max Marks: 75

Instructions to the Students:

1. All questions are compulsory
2. Draw diagrams / figures wherever necessary
3. Figures to right indicate full marks

Semester: IV

Subject Code: BP404T

Duration: 3 Hr.

Date: 21-06-2024

Q.1. Objective Type Questions (Answer All the Questions) (2 X 10) = 20

- i) Define the following terms: i) Pharmacokinetics ii) Pharmacodynamics
- ii) Differentiate between Sympathetic and Parasympathetic agents.
- iii) Enlist the steps involved in neurohumoral transmission.
- iv) Write mechanism of action of Chlorpromazine and Succinylcholine.
- v) Write any four factors modifying drug action.
- vi) Classify Antianxiety drugs with examples of each class.
- vii) Enumerate the techniques of administration of Local Anesthetics.
- viii) Enlist the antidote used in Morphine and Belladonna poisoning respectively.
- ix) Classify nootropics with suitable examples.
- x) Classify different types of receptors with examples.

Q.2. Long Answers (Answer 2 out of 3) (10 X 2) = 20

- i) Define Sympathomimetic drugs. Classify sympathomimetic drugs with suitable example. Explain the biosynthesis, storage, release, pharmacological actions and metabolism of catecholamine.
- ii) Classify General Anesthetic drugs with examples. Explain in detail various stages of General Anesthesia. Give an account of inhalational anesthetic agents.
- iii) Explain in detail the process of drug absorption and factors affecting drug absorption.

Q.3. Short Answers (Answer 7 out of 9) (5 X 7) = 35

- i) Describe Ligand Gated Ion Channel linked receptor with the help of a schematic diagram.
- ii) Explain the pharmacotherapy of Glaucoma.
- iii) Discuss the term Epilepsy and add note on Antiepileptic agents.
- iv) Classify Sedative Hypnotics. Write a note on Benzodiazepines.
- v) Define and classify Antidepressants. Explain pharmacological actions of Tricyclic Antidepressants.
- vi) Discuss various phases of clinical trials add a note on Pharmacovigilance.
- vii) Classify Anti-Parkinsonian drugs with examples. Explain the pharmacology of Levodopa.
- viii) Discuss different types of dose response curves.
- ix) Define and classify Adverse Drug Reactions with suitable examples.

*** END OF THE PAPER ***

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE
Supplementary Summer Examination – 2024

Course: B. Pharmacy

Semester: III

Subject Name: Physical Pharmaceutics I

Subject Code: BP302T

Max Marks: 75

Date: 14-06-2024

Duration: 3 Hr.

Instructions to the Students:

1. All questions are compulsory
2. Draw diagrams / figures wherever necessary
3. Figures to right indicate full marks

Q.1. Objective Type Questions (Answer All the Questions)

(10 X 2) = 20

- i) Define and classify ligand
- ii) Match the pair

a. Capillary Rise Method	Youngs
b. Ring Detachment Method	DuNuoy
c. Maximum Bubble Pressure Method	Laplace
d. Stalagmometric Method	Ostwald
- iii) Define and express the term pH
- iv) Differentiate between Crystalline solid and amorphous solid
- v) State and explain the kinetic molecular theory of gas.
- vi) Explain Biopharmaceutical Classification System
- vii) Write a short note on Spreading Coefficient
- viii) State the importance of complexation.
- ix) Justify the statement - "Solubility of gas decreases with increase in temperature"
- x) Define and classify ligand.

Q.2. Long Answers (Answer 2 out of 3)**(10 X 2) = 20**

- i) Define and elaborate the structure, type and working of Surface active agents
- ii) State and explain different gas laws.
- iii) Enlist and elaborate different factors affecting solubility of drug.

Q.3. Short Answers (Answer 7 out of 9)**(5 X 7) = 35**

- i) State and explain Capillary Rise method for determination of surface tension or interfacial tension.
- ii) Explain method of continuous variation in study of a complex.
- iii) Write a note on buffered isotonic solution
- iv) Draw a neat labelled diagram and highlight the changes in states of matter.
- v) State and explain Phase rule.
- vi) Explain different methods for determination of pH.
- vii) Enlist the applications and limitations of Nernst Distribution Law.
- viii) Define surface tension and interfacial tension. State why the Interfacial tensions are less than surface tensions
- ix) Write a note on protein drug binding

***** END OF THE PAPER *****

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE
Supplementary Summer Examination – 2024

Course: B. Pharmacy

Subject Name: PHARMACEUTICAL ENGINEERING

Max Marks: 75

Date: 20-06-2024

Semester: IV

Subject Code: BP304T

Duration: 3 Hr.

Instructions to the Students:

1. All questions are compulsory
2. Draw diagrams / figures wherever necessary
3. Figures to right indicate full marks

Q.1.	Objective Type Questions (Answer All the Questions)	(10 X 2) = 20
i)	In short explain size separation and its importance in pharmacy.	
ii)	Give mechanism of size reduction	
iii)	Draw neat and labelled diagram for plate & frame filter used in filtration process.	
iv)	Define centrifugation. Give applications of centrifugation.	
v)	Ball mill is not useful for size reduction of fibrous material. Explain.	
vi)	What are manometers? What different types of manometers do you know?	
vii)	Give statement for, along with equation, for Fourier's law.	
viii)	What is sieve shaker?	
ix)	Give heat transfer mechanisms	
x)	Give mechanism of size separation	
Q.2.	Long Answers (Answer 2 out of 3)	(10 X 2) = 20
i)	Define distillation. Explain the principle and working of steam distillation	
ii)	Classify equipments used for mixing of semisolids. Describe the principle, construction and working of ribbon blender.	
iii)	What do you mean by fluid flow, fluid statics and fluid dynamics? Differentiate between orifice meter and venturimeter. Describe venturimeter in detail.	
Q.3.	Short Answers (Answer 7 out of 9)	(5 X 7) = 35
i)	Explain the Reynold's experiment, give its significance.	
ii)	Explain principle, construction, working of perforated basket centrifuge.	
iii)	Explain principle, construction & Working of Ball mill.	
iv)	Explain theory & factors affecting filtration.	
v)	Explain principle, construction & working of cyclone separator.	
vi)	Explain principle, construction, working & uses of fluidized bed dryer.	
vii)	Differentiate between evaporation, distillation and drying. Explain the factors affecting evaporation.	
viii)	Explain the principle of molecular distillation.	
ix)	Explain principle, construction, working & uses of planetary mixer.	
*** END OF THE PAPER ***		

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**DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY,
LONERE RAIGAD-402103
Winter Semester Examination-2024**

Course: B. Pharmacy.

Subject Name: Pharmacology-1.

Max Marks: 75.

Duration: 3 Hr.

Semester: IV

Subject Code: (BP404-T)

Date: 27/12/2024

Instructions to the Students:

1. All questions are compulsory.
2. Draw diagrams / figures wherever necessary.
3. Figures to the right indicate full marks.

Q.1. Objective Type Questions (Answer All the Questions)

(10X2) = 20

- i) Define agonist and antagonist with examples.
- ii) What do you mean by idiosyncrasy.
- iii) Write the significance of therapeutic index?
- iv) Define pharmacovigilance.
- v) Name the drugs used in myasthenia gravis?
- vi) Enlist the drugs used in glaucoma?
- vii) Illustrate the classification of antiepileptics with examples.
- viii) Write the therapeutic application of Disulfiram.
- ix) Classify hallucinogenic agents with examples.
- x) Define drug abuse and drug addiction

Q.2. Long Answers (Answer 2 out of 3)

(2X10) = 20

- i) Define drug absorption. Explain the factors modifying drug action.
- ii) Write the classification of sympathomimetics. Explain the pharmacological actions, side effects and uses of adrenaline
- iii) Write the classification of opioid analgesics. Write the Pharmacology and adverse effects morphine

Q.3. Short Answers (Answer 7 out of 9)

(7 X 5) = 35

- i) Define drug. Write the different sources of drugs with suitable examples.
- ii) What are the different steps involved of drug discovery?
- iii) What are the different routes of drug administration with example?
- iv) Write a note on acetylcholinesterase inhibitors.
- v) Write the classification of parasymphathomimetics. Explain the pharmacological actions, side effects and uses of atropine.
- vi) Elaborate the different stages of general anesthetics with the help of physiological changes.
- vii) Explain the pharmacology, side effects and uses of alcohol.
- viii) Justify; why l-dopa and carbidopa are given together.
- ix) Write notes on nootropic agents

*** END OF THE PAPER ***

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

Regular/Supplementary Winter Examination – 2024

Course: B. Pharmacy

Subject Name: Physical Pharmaceutics-II

Max Marks: 75

Date: 24/12/2024

Semester: IV

Subject Code: BP403T

Duration: 3 Hrs.

Instructions to the Students:

- 1. All questions are compulsory.**
- 2. Draw diagrams / figures wherever necessary.**
- 3. Figures to right indicate full marks.**

Q.1. Objective Type Questions (Answer all the questions)

(02 X 10) = 20

- i) Differentiate between elastic and plastic deformation.
- ii) Draw a well labelled sketch of Ostwald's viscometer.
- iii) Define second order reaction with suitable example.
- iv) What is gold number? Give examples.
- v) Enlist the various identification tests of emulsion.
- vi) How will you apply DLVO theory to stabilize the colloidal dispersion?
- vii) State the Newton's law of flow with equation.
- viii) Define flow activators. Give examples.
- ix) How will you compare flocculated and deflocculated suspensions?
- x) What is plug flow? How it can be minimized?

Q.2. Long Answers (Answer 2 out of 3)

(10 X 02) = 20

- i) Define micromeritics and particle size. Explain in detail the derived properties of powder.
- ii) What is first order of reaction? Derive an equation for determination of rate constant of a first order reaction. Discuss the methods for determination of order of reaction.
- iii) Define dispersed system. Describe in detail the different purification methods of colloids.

Q.3. Short Answers (Answer 7 out of 9)

(05 X 07) = 35

- i) Define angle of repose. Explain the fixed funnel method for determination of angle of repose.
- ii) What is colloid? How will you give the types of colloids according to the affinity towards solvent?
- iii) Describe optical microscopy method for particle size determination with its merits and demerits.
- iv) Discuss the pharmaceutical and biological applications of rheology.
- v) Explain electrical double layer theory with well labelled sketch.
- vi) What is phase inversion? How the different factors responsible for it.
- vii) Describe the various factors affecting the chemical degradation of pharmaceutical product.
- viii) Discuss any two types of Non-Newtonian flow with its mechanism and graph.
- ix) Define emulsion. Write the various instabilities in emulsion.

-----END OF THE PAPER-----

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE
Supplementary Winter Examination – 2024

Course: B. Pharmacy

Subject Name: Medicinal Chemistry-I

Max Marks: 75

Date: 21/12/2024

Semester: IV

Subject code: BP402T

Duration: 03 Hr

Instructions:

1. All questions are compulsory
2. Draw diagrams wherever necessary
3. Figures to right indicates full marks

Q. No. 1 Objective Type Questions (All questions are compulsory)

(10X2) = 20

- i) Enlist the Factors affecting drug metabolism.
- ii) Why barbituric acid is inactive and barbiturates are active as sedative and hypnotic?
- iii) Draw any two structures of Solanaceous alkaloids.
- iv) Define the partition coefficient and give its importance in relation to biological activity.
- v) Write sulphonation as phase II metabolism reaction.
- vi) Write a note on Cholinesterase reactivator.
- vii) Give the synthesis of Ketamine hydrochloride.
- viii) Why phenytoin does not give sedation action?
- ix) Draw the structure of narcotic antagonist with their MOA.
- x) Define and give importance of Bioisosterism.

Q. No. 2 Long Answer Questions (Answer 2 out of 3)

(10X2) = 20

- i) Define metabolism, give its significance and explain oxidation as Phase I metabolism reaction.
- ii) Define and classify parasympathomimetic agents and explain in detail SAR and MOA Acetylcholine.
- iii) Define and classify sedatives and hypnotics and explain in detail SAR and MOA of Barbiturates.

Q. No. 3 Short Answer Questions (Answer 7 out of 9)

(5X7) = 35

- i) Write a note on Ionization and Solubility.
- ii) Enlist Phase II metabolism reaction and explain glucuronidation reaction.
- iii) Define and classify sympathomimetic agents.
- iv) Explain in detail SAR and MOA of β -blocker.
- v) Define and classify Anticonvulsants.
- vi) Explain in detail SAR of Phenothiazines derivative.
- vii) Define and classify General anesthetics.
- viii) Define and classify Anti-inflammatory agents.
- ix) Explain SAR of Morphine analogues.

*****END OF THE PAPER*****

DR.BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSIT, LONERE

Supplementary Semester Examination- Winter 2024

Date:-19/12/2024

Course: B.Pharmacy
Subject Name: Pharmaceutical Organic Chemistry- III
Max. Marks: 75

12
Semester: IV
Subject Code: BP401T
Duration: 3 Hr.

Instructions:

1. All questions are compulsory
2. Draw diagrams/figures wherever necessary
3. Figures to right indicate full marks

Q. 1. Objective type question (Answer all the questions)

(10X2) =20

- i. Define Enantiomers and Diastereoisomerism.
- ii. Draw the structure of Indole. Write its uses.
- iii. What is sequence rule?
- iv. Write down the classification of isomerism.
- v. How will you obtain from 5-nitro thiazole from thiazole?
- vi. What is Schmidt rearrangement?
- vii. Give structure and medicinal uses of Pyrazole.
- viii. Write difference between Stereospecific and Stereoselective reaction.
- ix. Write reaction for Metal hydride reduction (LiAlH_4).
- x. Define Optical activity with example.

Q. 2. Long answer (Answer 2 out of 3)

(10X2) =20

- i. Give method of preparation, reaction and medicinal uses of Pyrrole and Furan.
- ii. Explain in detail about Clemmensen reduction and Birch reduction reaction.
- iii. What is Confirmation? Describe the details about confirmation of n-butane and cyclohexane.

Q. 3. Short answer (Answer 7 out of 9)

(5X7) =35

- i. Give synthesis, reaction and medicinal uses of Quinoline and Isoquinoline.
- ii. Write a note on Atropisomerism.
- iii. Comment on relative aromaticity and reactivity of Pyrrole, Furan and Thiophene
- iv. Explain in detail about Dakin reaction.
- v. Define Geometrical isomerism. Write method of determination of geometrical isomerism.
- vi. Write a note on DL system of nomenclature.
- vii. Discuss about Racemic modification and resolution of racemic mixture.
- viii. Outline the basicity of Pyridine.
- ix. Write the methods of preparation of Imidazole.

-----END OF THE PAPER-----

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DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE
WINTER SEMESTER EXAMINATION-2024.

Course: B. Pharmacy.

Subject Name: Pharmacognosy and Phytochemistry-1.

Max Marks: 75.

Date: 02/01/2025

Semester: IV

Subject Code: BP405T

Duration: 3 Hr.

Instructions to the Students:

1. All questions are compulsory.
2. Draw diagrams / figures wherever necessary.
3. Figures to right indicate full marks.

Q.1. Objective Type Questions (Answer All the Questions)

(10X2) = 20

- i) What are Alkaloids? Give examples.
- ii) Define Hybridization.
- iii) Explain any two chemical tests of Flavonoids.
- iv) Which drugs are used in CVS and Anticancer activities from marine sources?
- v) Define Adulteration and enlist the methods of adulterating the drugs.
- vi) Explain any two identification test for Alkaloids.
- vii) What are Edible vaccines?
- viii) Explain the MOA of Gibberellins.
- ix) State any four traditional Chinese medicine therapies.
- x) Write the biological source and family of Acaia.

Q.2. Long Answers (Answer 2 out of 3)

(2X10) = 20

- i) Explain history, scope and development of Pharmacognosy.
- ii) Define cultivation. Explain various factors affecting Cultivation.
- iii) What is Plant tissue culture? Discuss the various nutritional requirements of plant tissue culture?

Q.3. Short Answers (Answer 7 out of 9)

(7 X 5) = 35

- i) Explain Ayurvedic system of medicine and its role in Pharmacognosy.
- ii) Write synonym, biological source, family, chemical constituents and uses of Cotton.
- iii) Define Tannins. What are the properties and chemical tests for Tannins.
- iv) Explain Novel medicinal plants from marine sources.
- v) Explain the specific chemical test for Anthraquinone glycosides and Cardiac glycosides.
- vi) Explain Hallucinogens and Teratogens with examples.
- vii) Define Crude drugs. Classify them and discuss them in brief with examples.
- viii) Define Carbohydrates. Classify them with examples. Give their function and general chemical test.
- ix) Write the biological source, chemical constituents and uses of Bees wax and Honey.

*** END OF THE PAPER ***

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DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

Regular /Supplementary Winter Examination-2024

Course: B. Pharmacy

Subject Name: Pharmaceutical Engineering

Max Mark:75

Date: 26/12/2024

Semester: III

Subject Code: BP304T

Duration:3 Hr.

Instructions:

1. All questions are compulsory.
2. Figure to the right indicate full marks of that question
3. Draw Diagrams/figures wherever necessary.

Q.1

Objective Type questions (Answer All the Questions)

(10x2) = 20

- A Enlist and describe the mechanisms of size reduction.
- B State Fourier's Law and provide its equation.
- C Define Reynolds number and discuss its importance in fluid mechanics.
- D Analyze the advantages and disadvantages of plastics as construction materials in the Pharmaceutical industry.
- E Give different mechanisms of heat transfer.
- F Define, classify corrosion and provide examples to illustrate the concept.
- G Draw neat and labelled diagram for Hammer Mill.
- H Differentiate between Drying & Evaporation.
- I What is mean by Filter Aids? Give its Example
- J Enlist Factors influencing on Evaporation.

Q.2

Long Answers (Solve Any 2 out of 3)

(2x10)= 20

- A Compare and contrast fluid flow, fluid statics, and fluid dynamics. Differentiate between orifice meter and venturimeter. Describe venturimeter in detail.
- B Define & Classify distillation. Explain the principle and working of steam distillation & Molecular distillation.
- C What are the main phases of a drying curve and what happens in each phase? How does a spray dryer work, and what are its key components? along with its Advantages and disadvantages.

Q.3

Short Answers (Solve Any 7 out of 9)

(7x5)= 35

- A Describe the principle, construction, and working of a ball mill.
- B Explain principle, construction, working of perforated basket centrifuge.
- C With help of neat labelled diagram Explain principle, construction, working & uses of fluidized bed dryer.
- D Differentiate between solid mixing and liquid mixing. Describe the principle, construction of ribbon blender.
- E Explain principle, construction, working of perforated basket centrifuge.
- F Classify materials of construction and discuss various types of ferrous metals used in pharmaceuticals.
- G Define Filtration & Explain in detail factor influencing on filtration
- H Explain the Bernoulli theorem, give its significance.
- I Explain the applications of size separation and describe the working and details of a sieve shaker

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15

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE
Winter Semester Examination 2024

Course: B. Pharmacy

Subject Name: Pharmaceutical Microbiology

Max Marks: 75

Date: 23-12-2024

Semester: III

Subject Code: BP303T

Duration: 3 Hr.

Instructions to the Students:

1. All questions are compulsory
2. Draw diagrams / figures wherever necessary
3. Figures to right indicate full marks

Q.1. Objective Type Questions (Answer All the Questions)

(10X2) = 20

- i) Define microbiology & write scope of pharmaceutical microbiology
- ii) Write the application of animal cell culture in pharmaceutical industry.
- iii) What do you mean by Phase contrast microscopy
- iv) Give difference between bacteriostatic and bactericidal agents.
- v) Classify different methods of sterilization
- vi) Explain clean area classification in short
- vii) What are cell lines
- viii) Give different antimicrobial agents used for preservation of pharmaceutical products
- ix) Define sterility indicator with example.
- x) Mention the factors affecting disinfectant activity

Q.2. Long Answers (Answer 2 out of 3)

(10X2) = 20

- i) Define sterilization. Explain the principle, procedure, applications and demerits of sterilization using autoclave
- ii) What are the sources of contamination and their control in aseptic room
- iii) Classify bacteria on the basis of nutritional requirements and add a note on raw materials used for Preparation of culture media.

Q.3. Short Answers (Answer 7 out of 9)

(5 X 7) = 35

- i) Describe bacterial growth curve
- ii) Write a note on cultivation of viruses
- iii) Differentiate between Total count and viable count
- iv) Explain assay of Vitamin B12
- v) Describe construction and working of laminar air flow
- vi) Discuss various methods of evaluation of bacteriostatic disinfectant
- vii) Enlist types of spoilage. Explain different factors affecting microbial spoilage of Pharmaceuticals
- viii) Write about Gram's & Acid fast staining.
- ix) Classify fungi & give the pharmaceutical uses of fungi

*** END OF THE PAPER ***

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DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE
End Semester Examination - Winter 2024
Date: 20/12/2024

Course: B. Pharmacy

Subject Name: Physical Pharmaceutics I

Max Marks: 75

Sem: III

Subject Code: BP302T

Duration: 3 Hrs

Instructions:

1. All questions are compulsory
2. Draw diagrams / figures wherever necessary
3. Figures to right indicate full marks

Q. 1. Objective Type Questions (Answer all the questions)

(10 x 2) = 20

- i) Differentiate between solid, liquid and gas.
- ii) State Raoult's law.
- iii) What is eutectic mixture?
- iv) Define interfacial tension and surface tension.
- v) Write application of buffer in pharmacy.
- vi) What is critical solution temperature? Give example.
- vii) Write Henderson Hasselbalch equation for acid and base.
- viii) Define polymorphism along with example.
- ix) Draw neat labeled diagram of HLB scale.
- x) Give importance of protein binding.

Q.2. Long Answers (Answer 2 out of 3)

(2 x 10) = 20

- i) What is surface tension and surface free energy? Explain in detail drop count method for determination of surface tension.
- ii) Define complexation and explain different classes of complexes in detail
- iii) State phase rule and explain in detail phenol-water system with neat diagram

Q.3. Short Answers (Answer 7 out of 9)

(7 x 05) = 35

- i) Explain crystalline, amorphous & polymorphism nature in solid substances
- ii) Explain different factors affecting on solubility of drug.
- iii) Enlist different physicochemical properties. Explain refractive index and optical rotation.
- iv) Write a detail note on liquid crystals.
- v) What is partition coefficient? Write a note on it along with its formula.
- vi) Define isotonic and hypertonic solution. Describe Sorensen's pH scale.
- vii) Explain any one method to determine pH of solution.
- viii) Summarize concept of solubilization and detergency.
- ix) Explain any one method of adjusting tonicity.

Course: B. Pharmacy

Subject Name: Pharmaceutical Organic Chemistry- II

Max Marks: 75

Date: 18/12/2024

Semester: III

Subject Code: BP301T

Duration: 3 Hr.

Instructions to the Students:

1. All questions are compulsory
2. Draw diagrams / figures wherever necessary
3. Figures to right indicate full marks

Q.1 Objective type of questions (Answer all the questions)

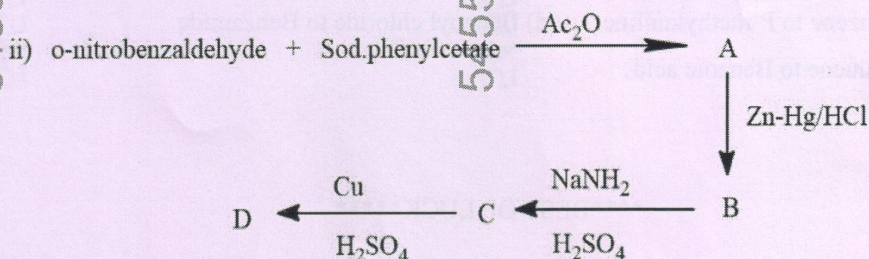
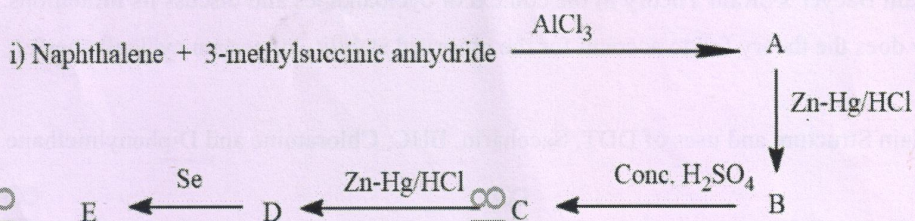
(10x2) = 20

- i) Explain the orbital picture of benzene and the type of hybridization involved.
- ii) Predict the product when benzoic acid reacts with PCl_5 and SOCl_2
- iii) How do fatty acids undergo esterification?
- iv) Write two qualitative tests used to identify phenols.
- v) What are the synthetic uses of aryl diazonium salts?
- vi) Draw and nomenclate 1, 4 dialin
- vii) Draw and nomenclate Anthraquinone
- viii) Draw and nomenclate α -phenyl-o-nitrocinnamic acid
- ix) Draw and nomenclate 9-acetylphenanthrene
- x) Draw and nomenclate 1,4 naphthaquinone

Q.2 Long answers (Answer 2 out of 3)

(10x2) = 20

- i) What are Analytical constants? Explain the principle and significance of any four analytical constants used in fat and oil analysis.
- ii) State Huckel's rule of aromaticity. Explain the aromaticity/non-aromaticity of Cyclopropenyl Cation, Cycloheptatrienyl Cation, Cyclobutadiene and Cyclooctatetraene.
- iii) Draw the structures and complete the following reaction by finding A, B, C, D, and E.



Q.3 Short Answers (Answer 7 out of 9)**(5x7) = 35**

i) Describe the mechanism of Friedel-Crafts alkylation and acylation with respect to the benzene, including the limitations of these reactions.

ii) Discuss the effect of electron-donating and electron-withdrawing substituents on the reactivity and orientation of mono-substituted benzene compounds in electrophilic substitution reactions.

iii) Explain the acidity of phenols, and how the presence of different substituents affects their acidity, give examples.

iv) Explain the acidity of aromatic acids, the influence of substituents on its acidity, and some of the important reactions it undergoes.

v) Explain the reaction, mechanisms of nitration, sulfonation, and halogenation of naphthalene. How do these reactions differ from those of benzene?

vi) Describe the oxidation reactions of anthracene. Provide the mechanism for the formation of anthraquinone and explain its industrial significance.

vii) Explain Baeyer's Strain Theory in the context of cycloalkanes and discuss its limitations. How does the theory fail to account for the observed stability of certain cycloalkanes?

viii) Explain Structure and uses of DDT, Saccharin, BHC, Chloramine and Diphenylmethane.

ix) Convert the following

- | | |
|-------------------------------|-------------------------------------|
| a) Aniline to p-benzoquinone | b) Benzylamine to N-Benzylacetamide |
| c) Benzene to P-methylaniline | d) Benzoyl chloride to Benzamide |
| e) Toluene to Benzoic acid | |

*****BEST OF LUCK*****

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

End Semester Examination – Summer 2023

Date: 24/07/2023

Course : B. Pharmacy
Subject Name : Physical Pharmaceutics I
Max Marks : 75

Sem: III
Subject Code: BP302T
Duration : 3 Hr.

Instructions:

1. All questions are compulsory
2. Draw diagrams / figures wherever necessary
3. Figures to right indicate full marks

Q. 1. Objective Type Questions (Answer all the questions)

(10 x 2) = 20

- i) Define polymorphism along with example.
- ii) Draw HLB scale.
- iii) Write about relative humidity.
- iv) Define CMC and surface tension.
- v) Write application of buffer in pharmacy.
- vi) Define UCT and LCT along with example.
- vii) Write Henderson Hasselbalch equation for acid and base.
- viii) State Raoult's law.
- ix) Give importance of protein binding.
- x) Why surface tension is greater than interfacial tension.

Q. 2. Long Answers (Answer 2 out of 3)

(2 x 10) = 20

- i) Explain distribution law along with its application and limitation.
- ii) Define complexation and classify it.
- iii) Explain different methods to determine surface and interfacial tension.

Q. 3. Short Answers (Answer 7 out of 9)

(7 x 5) = 35

- i) Explain different factors affecting on solubility of drug.
- ii) Write a note on liquid crystals.
- iii) Explain properties of crystalline and amorphous solids.
- iv) State Phase Rule and explain phenol-water system with neat diagram.
- v) Enlist different physicochemical properties of drugs and explain refractive index.
- vi) Write a note on spreading coefficient.
- vii) Explain any one method to determine pH of solution.
- viii) Write a note on solubilization and detergency.
- ix) Explain solubility method to determine complexation.

-----END OF THE PAPER-----

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DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

End Semester Examination – Summer 23

Date: 14/07/2023

Course: B. Pharmacy
Subject Name: Physical Pharmaceutics-II
Max Marks: 75

Sem: IV
Subject Code: BP403T
Duration: 3 Hr.

Instructions:

1. All questions are compulsory
2. Draw diagrams / figures wherever necessary
3. Figures to right indicate full marks

Q. 1. Objective Type Questions (Answer all the questions)

(10 x 2) = 20

- i) What is Brownian movement? Which formulation shows Brownian movement?
- ii) Explain the term 'Colloid' mention its applications.
- iii) Explain the term 'Shear thinning' and 'Shear thickening' systems. Give one example of each.
- iv) Discuss the term 'Thixotropy'.
- v) Differentiate between flocculated and deflocculated suspension.
- vi) Describe different types of strain.
- vii) Enlist various identification tests for emulsion and explain any one of them.
- viii) Write steps involved in the preparation of emulsion by wet gum method.
- ix) Draw neat labelled diagram of Anderson pipette.
- x) Explain order of reaction with example.

Q. 2. Long Answers (Answer 2 out of 3)

(2 x 10) = 20

- i) Define Rheology and explain in details all fluids (flow) under rheology.
- ii) What is Micromeritics? Give its importance in pharmacy. Explain in details methods used to determine particle size.
- iii) What is colloidal dispersion? How will you stabilise colloidal dispersion by DLVO theory.

Q. 3. Short Answers (Answer 7 out of 9)

(7 x 5) = 35

- i) Write a note on chemical kinetics.
- ii) Explain in details about ICH guidelines for accelerated stability testing.
- iii) Define drug stability. Enlist and explain types of degradation of drug with example.
- iv) Define stress and differentiate between elastic and plastic deformation.
- v) Define viscosity. Classify viscometers and explain in details working of any one class of viscometers.
- vi) Explain general properties of different types of colloids.
- vii) Write a note on emulsion.
- viii) Discuss about coulter-counter method for determination of particle volume.
- ix) State and explain Hooke's Law.

—END OF THE PAPER—

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE**End Semester Examination –Summer 2023****Date: 17/07/2023****Course : B. Pharmacy****Sem: IV****Subject Name : Pharmacology I****Subject Code :****BP404T****Max Marks : 75****Duration : 3 Hr.****Instructions:**

1. All questions are compulsory
2. Draw diagrams / figures wherever necessary
3. Figures to right indicate full marks

Q. 1. Objective Type Questions (Answer all the questions) (10 x 2 = 20)

- i) Explain the term **Therapeutic Index**.
- ii) What is meant by :
 - a) Pharmacokinetics
 - b) Pharmacodynamics
- iii) Write different cholinergic receptors with their location and function.
- iv) Mention any two examples of drugs used in
 - a) Parkinsonism
 - b) Alzheimer
- v) Write uses of Atropine sulphate.
- vi) What are preanaesthetics? Write examples of drugs used as preanaesthetics.
- vii) Define with examples :
 - a) Antipsychotics
 - b) Antianxiety agents
- viii) Write any two examples of drugs used as :
 - a) Skeletal muscle relaxants
 - b) Nootropics
- ix) What is Pharmacovigilance and Enzyme Induction?
- x) Write different sources of drugs with examples.

Q. 2. Long Answers (Answer 2 out of 3)**(2 x 10 = 20)**

- i) State various routes of drug administration with examples.
Write down advantages and disadvantages of
 - a) Sublingual route
 - b) Oral route
- ii) Define and classify sedative hypnotics with examples.
Explain mechanism of action of Benzodiazepines.
- iii) Explain in detail factors affecting action of drug.

Q. 3. Short Answers (Answer 7 out of 9)

(7 x 5) = 35

- i) Define Antidepressants. Write short note on SSRIs.
- ii) Write drug therapy for Glaucoma.
- iii) Define local anaesthetics. Explain their mechanism of action.
- iv) Write short note on clinical trial.
- v) What are different types of receptors. Explain any one.
- vi) Explain synthesis, storage, metabolism and release of Acetylcholine.
- vii) Write uses of Morphine.
- viii) Write short note on Antagonism.
- ix) Write uses of α blockers.

-----END OF THE PAPER-----

23
DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE
End Semester Examination – Summer 2023

Date: 10/07/2023

Course: B. Pharmacy

Sem: IV

Subject Name: Pharmaceutical Organic Chemistry-III

Subject Code: BP401T

Max Marks: 75

Duration:

3 Hr.

Instructions:

1. All questions are compulsory
2. Draw diagrams / figures wherever necessary
3. Figures to right indicate full marks

Q. 1. Objective Type Questions (Answer all the questions)

(10 x 2)

- i) Give the structure and medicinal uses of Pyridine.
- ii) What is Dakin reaction?
- iii) Write the medicinal uses of Thiazole and Imidazole.
- iv) Give the structure of Thiophene and Oxazole.
- v) What are chiral and achiral molecules?
- vi) Write a note on Metal hydride reduction.
- vii) Define atropisomerism with example.
- viii) What is optical activity?
- ix) Give the structure and medicinal uses of Acridine.
- x) Define and explain Mesocompound.

(2 x 10)

Q. 2. Long Answers (Answer 2 out of 3)

- i) Write the EAS reactions, synthesis and medicinal uses of Pyrrole and Furan.
- ii) Explain in detail about confirmations of n-Butane and Cyclohexane.
- iii) Define racemic modification. Describe the methods of resolution of racemic mixture.

(7 x 5) =

Q. 3. Short Answers (Answer 7 out of 9)

- i) Explain the terms with suitable example
a) Diastereoisomerism b) Enantiomerism
- ii) Outline the methods of synthesis of Indole.
- iii) Give the reaction and mechanism involved in Beckmann's rearrangement.
- iv) Write a note on basicity of pyridine.
- v) Describe the Birch reduction reaction.
- vi) Write a note on R and S system of configuration.
- vii) Give the reaction and mechanism of Oppenauer oxidation reaction.
- viii) Explain in detail asymmetric synthesis.
- ix) Give a brief account of stereospecific and stereoselective reactions.

—END OF THE PAPER—

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

End Semester Examination – Winter 2022

Date: 07/02/2023

Course: B. Pharmacy

Sem: IV

Subject Name: Pharmaceutical Organic Chemistry-III

Subject Code: BP401T

Max Marks: 75

Duration:

3 Hr.

Instructions:

1. All questions are compulsory
2. Draw diagrams / figures wherever necessary
3. Figures to right indicate full marks

Q. 1. Objective Type Questions (Answer all the questions)

(10 x 2) = 20

- i) Give the structure and medicinal uses of Pyridine.
- ii) What is Dakin reaction?
- iii) Write the medicinal uses of Thiazole and Imidazole.
- iv) Give the structure of Thiophene and Oxazole.
- v) What are chiral and achiral molecules?
- vi) Write a note on Metal hydride reduction.
- vii) Define atropisomerism with example.
- viii) What is optical activity?
- ix) Give the structure and medicinal uses of Acridine.
- x) Define and explain Mesocompound.

Q. 2. Long Answers (Answer 2 out of 3)

(2 x 10) = 20

- i) Write the EAS reactions, synthesis and medicinal uses of Pyrrole and Furan.
- ii) Explain in detail about confirmations of n-Butane and Cyclohexane.
- iii) Define racemic modification. Describe the methods of resolution of racemic mixture.

Q. 3. Short Answers (Answer 7 out of 9)

(7 x 5) = 35

- i) Explain the terms with suitable example
 - a) Diastereoisomerism
 - b) Enantiomerism
- ii) Outline the methods of synthesis of Indole.
- iii) Give the reaction and mechanism involved in Beckmann's rearrangement.
- iv) Write a note on basicity of pyridine.
- v) Describe the Birch reduction reaction.
- vi) Write a note on R and S system of configuration.
- vii) Give the reaction and mechanism of Oppenauer oxidation reaction.
- viii) Explain in detail asymmetric synthesis.
- ix) Give a brief account of stereospecific and stereoselective reactions.

-----END OF THE PAPER-----

back look

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DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

End Semester Examination – Summer23

Date: 19/07/2023

Course:	B. Pharmacy	Sem:IV	
Subject Name:	Pharmacognosy & Phytochemistry I	Subject Code:	BP 405T
Max Marks:	75	Duration:	3 Hr.

Instructions:

1. All questions are compulsory
2. Draw diagrams / figures wherever necessary
3. Figures to right indicate full marks

Q. 1. Objective Type Questions (Answer all the questions) (10 x 2) = 20

- i) Define Pharmacognosy and give an example of organized and unorganized crude drug.
- ii) Define mutation and enlist types of mutation.
- iii) Give the biological source and uses of Castor oil.
- iv) Define Teratogen and give an example of Teratogen.
- v) Enlist Crude drug evaluation methods (Any four).
- vi) What are glycosides? Give an example of a drug containing glycosides.
- vii) What is the function of Auxin in the development of plants?
- viii) Give any two examples of crude drugs derived from animal origin.
- ix) What are primary metabolites? Give any two examples of it.
- x) Write contribution of following scientists to Pharmacognosy.
a) Charak b) Seydler

Q. 2. Long Answers (Answer 2 out of 3) (2 x 10) = 20

- i) Define Adulteration and explain various types of adulteration of crude drugs with suitable examples.
- ii) Illustrate theory, basic concept, diagnosis, treatment and dosage forms used in Ayurvedic system of medicine.
- iii) What are plant hormones? Explain various plant hormones along with their functions and examples.

Q. 3. Short Answers (Answer 7 out of 9) (7 x 5) = 35

- i) Discuss in detail about extrinsic and intrinsic factors affecting the cultivation of medicinal and aromatic plants. (give details of any 4 factors)
- ii) Give the biological source, method of preparation, and uses of following drugs.

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- a) Gelatin b) Papain
- iii) Define plant tissue culture and explain any four types of plant tissue cultures.
 - iv) Write a note on Edible vaccines.
 - v) Explain historical development of Pharmacognosy.
 - vi) Define and classify Alkaloids. Give the properties, identification test for the same.
 - vii) Give the pharmacognostic account of Chaulmoogra oil.
 - viii) Define Hallucinogens and natural allergens. Classify the natural allergens along with suitable examples.
 - ix) What is the need for classification of crude drugs? Explain morphological classification of crude drugs, its advantages and limitations.

-----END OF THE PAPER-----

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

End Semester Examination – Winter 2022

Date:

29

Course: B. Pharmacy
Subject Name: Pharmaceutical Engineering
Max Marks: 75

Sem:
Subject Code:
Duration: 3 Hr.

Instructions:

1. All questions are compulsory
2. Draw diagrams / figures wherever necessary
3. Figures to right indicate full marks

Q. 1. Objective Type Questions (Answer all the questions) (10 x 2) = 20

- i) What is Reynold's number? Give its importance.
- ii) What are heat exchangers. Give their types.
- iii) Define evaporation. Classify evaporators.
- iv) Give the applications of drying.
- v) Describe the modes of size reduction.
- vi) Differentiate between solid mixing and liquid mixing.
- vii) Write the advantages and disadvantages of plastics as material of construction.
- viii) Explain the term pitting corrosion and galvanic corrosion.
- ix) Explain the mechanism of filtration.
- x) State Fourier's law with equation.

Q. 2. Long Answers (Answer 2 out of 3) (2 x 10) = 20

- i) Define Centrifugation. Classify centrifuges with suitable examples. Discuss in detail on perforated basket centrifuge.
- ii) Write the advantages of size reduction. Discuss the factors affecting selection of a mill for size reduction.
- iii) Classify distillation. Explain the principle, construction, working and applications of molecular distillation.

Q. 3. Short Answers (Answer 7 out of 9) (7 x 5) = 35

- i) Explain in detail about short tube evaporator.
- ii) With the help of neat labelled diagram explain fluidised bed dryer.
- iii) Write the theory of vortex formation and give its prevention methods.
- iv) Discuss on the various modes of size separation.
- v) What are filter aids? Why are they used. Enlist the filter aids used in pharmacy practice.
- vi) Classify materials of construction. Discuss about various types of ferrous metals used.
- vii) Describe the various modes of heat transfer with suitable examples.
- viii) Explain the factors influencing mixing of solids. Write the principle of planetary mixer

- ix) Explain with the help of diagram the construction and working of a Hammer mill

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-----END OF THE PAPER-----

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DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

End Semester Examination – Summer 2022

Course: B. Pharmacy

Sem: III

Subject Name: Pharmaceutical Engineering

Subject Code: BP304T

Max. Marks: 75

Date: 30/07/2022

Duration: 3.45 Hrs.

Instructions –

1. All questions are compulsory
2. Answers to MCQs should be written in full sentences
3. Draw diagrams / figures wherever necessary
4. Figures to right indicate full marks

Q. 1. Multiple Choice Questions (MCQs) = 20 x 1 = 20 (All the questions are compulsory)

- 1) When principle of conservation of energy is applied to flow of fluids then resulting equation is known as
 - a) Reynold's Number
 - b) Bernoulli's theorem
 - c) Hagen-poiseuille's equation
 - d) Kick's theory
- 2) If the vapour pressure of the liquid is more the evaporation rate is
 - a) High
 - b) Low
 - c) Medium
 - d) Too low
- 3) Mechanism of fluid energy mill is
 - a) Impact pressure
 - b) Attrition and Impact
 - c) Cutting
 - d) None of the above
- 4) Climbing film evaporator also called as
 - a) Falling film evaporator
 - b) Triple effect evaporator
 - c) Rising film evaporator
 - d) Forced circulation
- 5) Which of the following is not an advantage of size reduction?
 - a) Improved dissolution rate
 - b) Improved physical stability
 - c) Improved absorption rate
 - d) Drug degradation
- 6) Which of the following theory not describe rate of filtration?
 - a) Darcy's Law
 - b) Poiseuille's equation
 - c) Kozeny carman equation
 - d) Noye's Whitney equation
- 7) Flow pattern in liquid-liquid mixing
 - a) Radial flow
 - b) Tangential flow
 - c) Longitudinal flow
 - d) All of the above
- 8) Alcohol and water is example of
 - a) Positive mixture
 - b) Negative mixture

- c) Neutral mixture d) None of the above
- 9) Centrifugation is used for....
 a) Mixing b) Purification
 c) Separation d) Sizing
- 10) Which of the following is type of stainless steel?
 a) Martensitic b) Ferritic
 c) Austenitic d) All of the above
- 11) Which of the following is not a filter aid?
 a) Diatomaceous earth b) Perlite
 c) Cellulose d) Cotton
- 12) Austenitic consists of
 a) 13 to 20% chromium +6 to 22% nickel +0.1 to 0.25% carbon
 b) 12 to 20% chromium +2% Nickel+0.2 to 0.4 % carbon
 c) 20 to 40% chromium+12% nickel +1 to 25 carbon
 d) 15 to 30 % chromium+0.15%carbon
- 13) Impingement, enlargement and straining are related to
 a) Mixing b) Centrifugation
 c) Filtration d) All of these
- 14) What is pore size of filtration membrane to remove bacteria?
 a) 0.25 μ m b) 0.27 μ m
 c) 0.22 μ m d) 0.26 μ m
- 15) Mixing device technically called as
 a) Impellers b) Turbines
 c) Paddles d) All of these
- 16) Raoult's law is related to
 a) Vapour pressure b) Atmospheric pressure
 c) Osmotic pressure d) All of the above
- 17) Heat transfer place as per
 a) Zeroth law of thermodynamics b) First law of thermodynamics
 c) Second law of thermodynamics d) Kirchhoff's law
- 18) Corrosion of metal involves
 a) Physical reaction b) Chemical reaction
 c) Both a) and b) d) None of the above
- 19) Free moisture content is
 a) Total water content minus equilibrium moisture content.
 b) Total water content plus equilibrium moisture content
 c) Ratio of total water content to the equilibrium moisture content
 d) Total water present in solid minus water in environment.
- 20) Tunnel dryer is variant of
 a) Rotary drum dryer b) Fluidized bed dryer

c) Tray dryer

d) Spray dryer

Q. 2. Long Answers) = $2 \times 10 = 20$ (Answer 2 out of 3)

- 1) Discuss in detail various modes of heat transfer. Draw a neat diagram of shell and tube heat exchanger and explain its working.
- 2) Define distillation, write application of distillation and explain construction working laboratory scale vacuum distillation unit.
- 3) Define and classify evaporation and Describe in detail factor affecting evaporation.

Q. 3. Short Answers = $7 \times 5 = 35$ (Answer 7 out of 9)

- 1) Write a note on theories of filtration.
- 2) Explain principle, construction and working of rotameter.
- 3) Explain theories of corrosion.
- 4) Discuss the principle and application of centrifugation.
- 5) Explain in detail multiple effect evaporators.
- 6) Write in detail factors affecting size reduction.
- 7) How will you carry out conveying of solid?
- 8) Write a note on lyophilizer.
- 9) List the equipments used for solid mixing in pharmaceutical industry. explains construction and working of sigma blade mixer.

-----END OF THE PAPER-----

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DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

End Semester Examination – Summer 2022

Course: B. Pharmacy

Sem: III

Subject Name: Pharmaceutical Engineering

Subject Code: BP304T

Max. Marks: 75

Date: 30/07/2022

Duration: 3.45 Hrs.

Instructions –

1. All questions are compulsory
2. Answers to MCQs should be written in full sentences
3. Draw diagrams / figures wherever necessary
4. Figures to right indicate full marks

Q. 1. Multiple Choice Questions (MCQs) = 20 x 1 = 20 (All the questions are compulsory)

- 1) When principle of conservation of energy is applied to flow of fluids then resulting equation is known as
 - a) Reynold's Number
 - b) Bernoulli's theorem
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- 2) If the vapour pressure of the liquid is more the evaporation rate is
 - a) High
 - b) Low
 - c) Medium
 - d) Too low
- 3) Mechanism of fluid energy mill is
 - a) Impact pressure
 - b) Attrition and Impact
 - c) Cutting
 - d) None of the above
- 4) Climbing film evaporator also called as
 - a) Falling film evaporator
 - b) Triple effect evaporator
 - c) Rising film evaporator
 - d) Forced circulation
- 5) Which of the following is not an advantage of size reduction?
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 - c) Kozeny carman equation
 - d) Noye's Whitney equation
- 7) Flow pattern in liquid-liquid mixing
 - a) Radial flow
 - b) Tangential flow
 - c) Longitudinal flow
 - d) All of the above
- 8) Alcohol and water is example of
 - a) Positive mixture
 - b) Negative mixture

- c) Neutral mixture d) None of the above
- 9) Centrifugation is used for....
a) Mixing b) Purification
c) Separation d) Sizing
- 10) Which of the following is type of stainless steel?
a) Martensitic b) Ferritic
c) Austenitic d) All of the above
- 11) Which of the following is not a filter aid?
a) Diatomaceous earth b) Perlite
c) Cellulose d) Cotton
- 12) Austenitic consists of
a) 13 to 20% chromium +6 to 22% nickel +0.1 to 0.25% carbon
b) 12 to 20% chromium +2% Nickel+0.2 to 0.4 % carbon
c) 20 to 40% chromium+12% nickel +1 to 25 carbon
d) 15 to 30 % chromium+0.15%carbon
- 13) Impingement, enlargement and straining are related to
a) Mixing b) Centrifugation
c) Filtration d) All of these
- 14) What is pore size of filtration membrane to remove bacteria?
a) 0.25 μ m b) 0.27 μ m
c) 0.22 μ m d) 0.26 μ m
- 15) Mixing device technically called as
a) Impellers b) Turbines
c) Paddles d) All of these
- 16) Raoult's law is related to
a) Vapour pressure b) Atmospheric pressure
c) Osmotic pressure d) All of the above
- 17) Heat transfer place as per
a) Zeroth law of thermodynamics b) First law of thermodynamics
c) Second law of thermodynamics d) Kirchhoff's law
- 18) Corrosion of metal involves
a) Physical reaction b) Chemical reaction
c) Both a) and b) d) None of the above
- 19) Free moisture content is
a) Total water content minus equilibrium moisture content.
b) Total water content plus equilibrium moisture content
c) Ratio of total water content to the equilibrium moisture content
d) Total water present in solid minus water in environment.
- 20) Tunnel dryer is variant of
a) Rotary drum dryer b) Fluidized bed dryer

c) Tray dryer

d) Spray dryer

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Q. 2. Long Answers) = $2 \times 10 = 20$ (Answer 2 out of 3)

- 1) Discuss in detail various modes of heat transfer. Draw a neat diagram of shell and tube heat exchanger and explain its working.
- 2) Define distillation, write application of distillation and explain construction working laboratory scale vacuum distillation unit.
- 3) Define and classify evaporation and Describe in detail factor affecting evaporation.

Q. 3. Short Answers = $7 \times 5 = 35$ (Answer 7 out of 9)

- 1) Write a note on theories of filtration.
- 2) Explain principle, construction and working of rotameter.
- 3) Explain theories of corrosion.
- 4) Discuss the principle and application of centrifugation.
- 5) Explain in detail multiple effect evaporators.
- 6) Write in detail factors affecting size reduction.
- 7) How will you carry out conveying of solid?
- 8) Write a note on lyophilizer.
- 9) List the equipments used for solid mixing in pharmaceutical industry. explains construction and working of sigma blade mixer.

-----END OF THE PAPER-----

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DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

End Semester Examination – Winter 2022

Date: 29/12/2022

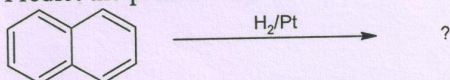
Course :	B. Pharmacy	Sem: III
Subject Name :	Pharmaceutical Organic Chemistry-II	Subject Code: BP301T
Max Marks :	75	Duration : 3 Hr.

Instructions:

1. All questions are compulsory
2. Draw Structures/ diagrams / figures wherever necessary
3. Figures to right indicate full marks

Q. 1. Objective Type Questions (Answer all the questions) (10 x 2) = 20

- i) Give Structure and uses of DDT.
- ii) Define Acid Value and give its significance.
- iii) Write Structure and uses of Resorcinol.
- iv) Write down qualitative test for phenol.
- v) Write Huckle rule for aromaticity with suitable example.
- vi) Predict the product



- vii) Give any two reactions of benzoic acid.
- viii) Discuss structure and medicinal uses of Naphthalene.
- ix) Write any two methods for preparation of diphenylmethane.
- x) Write down the structure and give numbering to the derivatives of naphthalene and Anthracene

Q. 2. Long Answers (Answer 2 out of 3) (2 x 10) = 20

- i) Define fats and oils with example and give difference between them. Explain Hydrolysis, Hydrogenation and Rancidity reactions of fats.
- ii) What are condensed polynuclear hydrocarbon. Write down Haworth synthesis of Anthracene and any two-chemical reaction of it. Draw the structure of derivatives of it along with uses.
- iii) What is Friedel craft reaction. Explain in detail Friedel Crafts alkylation and acylation. Give its limitations.

Q. 3. Short Answers (Answer 7 out of 9) (7 x 5) = 35

- i) What are activating & deactivating groups?
- ii) Explain reaction and mechanism of nitration, halogenation and sulphonation in benzene.
- iii) Write down about effect of substituents on acidity of phenol. Give synthetic uses of aryl diazonium salt.
- iv) Give analytical and synthetic evidences in the derivation of structure of benzene.
- v) Explain electrophilic substitution in diphenylmethane. Give its uses.
- vi) Write Electrophilic substitution reaction of phenanthrene.
- vii) Discuss Baeyer's Strain theory.
- viii) Give reactions of cyclopropane and cyclobutane.
- ix) Explain the basicity of aromatic amine

-----END OF THE PAPER-----

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DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

End Semester Examination – Winter 2022

Date: 22/07/2023

Course :	B. Pharmacy	Sem: III
Subject Name :	Pharmaceutical Organic Chemistry-II	Subject Code: BP301T
Max Marks :	75	Duration : 3 Hr.

Instructions:

1. All questions are compulsory
2. Draw diagrams / figures wherever necessary
3. Figures to right indicate full marks

Q. 1. Objective Type Questions (Answer all the questions) (10 x 2) = 20

- i) Structure and uses of DDT.
- ii) Define Reichert Meissl Value and give its significance.
- iii) Structure and uses of Resorcinol.
- iv) Write down qualitative test for phenol.
- v) Huckel rule for aromaticity.
- vi) Saponification of oils.
- vii) Any two reactions of benzoic acid.
- viii) Structure and medicinal uses of Naphthalene.
- ix) Any two method for preparation of diphenylmethane.
- x) Coulson and Moffitt's modification.

Q. 2. Long Answers (Answer 2 out of 3) (2 x 10) = 20

- i) Define fats and oils with example and give difference between them. Explain acid value, and saponification value with significance.
- ii) What are condensed polynuclear hydrocarbon. Write down Haworth synthesis of Anthracene and any two-chemical reaction of it. Draw the structure of derivatives of it along with uses.
- iii) Explain in detail Friedel Crafts alkylation and acylation in benzene with mechanism of reaction. Give its limitations.

Q. 3. Short Answers (Answer 7 out of 9) (7 x 5) = 35

- i) Explain in detail evidences given by Kekule to establish the structure of benzene.
- ii) Explain reaction and mechanism of nitration, halogenation and sulphonation in benzene.
- iii) Write down about effect of substituents on acidity of phenol. Give synthetic uses of aryl diazonium salt.
- iv) Explain in detail hydrogenation of oils. Give preventive major for rancidity of oils.
- v) Explain electrophilic substitution in diphenylmethane. Give its uses.
- vi) Give any three reactions of Phenanthrene. Note on derivatives of it.
- vii) Discuss Baeyer's Strain theory.
- viii) Give reactions of cyclopropane and cyclobutane.
- ix) Define ester value give significance and principle involved in its determination.

-----END OF THE PAPER-----

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DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

End Semester Examination – Winter 2022

Course :	B. Pharmacy	Date: 25/07/2023
Subject Name :	Pharmaceutical Microbiology	Sem: III
Max Marks :	75	Subject Code : BP303T
		Duration : 3 Hr.

Instructions:

1. All questions are compulsory
2. Draw diagrams / figures wherever necessary
3. Figures to right indicate full marks

Q. 1. Objective Type Questions (Answer all the questions) (10 x 2) = 20

- i) Define Microbiology Enlist different branches of microbiology
- ii) Classify Microorganisms
- iii) Classify Bacteria
- iv) Define Industrial Microbiology
- v) Define the term Resolving Power and Numerical Aperture
- vi) Write The Classification of Microscope
- vii) Write A Note On Shape And Arrangement Of Bacteria
- viii) Differentiate Flagella And Pili
- ix) Write The Properties of Agar
- x) Differentiate between total count and viable count

Q. 2. Long Answers (Answer 2 out of 3) (2 x 10) = 20

- i) Explain in detail applications of Pharmaceutical Microbiology
- ii) Write In Detail About Contribution Of Louis Pasteur In The Field Of Microbiology
- iii) Write In Detail About Discovery Of Antibiotics

Q. 3. Short Answers (Answer 7 out of 9) (7 x 5) = 35

- i) Differentiate Between Prokaryotic And Eukaryotic Cell
- ii) Write general characteristics of rickettsia.
- iii) Explain the different natural sources of actinomycetes.
- iv) What is dermatophytes.Explain?
- v) Explain in short classification of Fungi.
- vi) How can human amoebiasis be prevented and treated
- vii) Write The Importance Of Algae.
- viii) Write general characteristics of interferon's
- ix) What Are Coliforms And Explain It.

-----END OF THE PAPER-----

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

End Semester Examination – Winter 2022

Date: 15.02.2023

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Course: B. Pharmacy

Sem: III

Subject Name: Pharmaceutical Microbiology

Subject Code BP303T

Max Marks: 75

Duration:

3 Hr.

Instructions:

1. All questions are compulsory
2. Draw diagrams / figures wherever necessary
3. Figures to right indicate full marks

Q. 1. Objective Type Questions (Answer all the questions)

(10 x 2) = 20

- i) Differentiate between gram-positive and gram-negative bacteria.
- ii) Write about bacterial growth curve.
- iii) Classify bacterial staining.
- iv) Define i) Sterilization ii) D value
- v) List factors influencing disinfection
- vi) List general properties of viruses
- vii) Differentiate between optical and electron microscope
- viii) Classify clean area as per WHO.
- ix) List ideal characteristics required for preservatives used in pharmaceutical products
- x) Classify methods used for measurement of bacterial growth

Q. 2. Long Answers (Answer 2 out of 3)

(2 x 10) = 20

- i) Discuss main sources of contamination in aseptic area? How will you prevent it?
- ii) Classify methods of sterilization and explain in detail moist heat sterilization.
- iii) Define microbiology. Write about various branches of microbiology. Add a note its scope and importance in pharmacy

Q. 3. Short Answers (Answer 7 out of 9)

(7 x 5) = 35

- i) Explain ultra-structure of bacterial cell with suitable diagram.
- ii) Explain IMViC test.
- iii) Give the in-detail classification of disinfectants.
- iv) Explain Phenol coefficient test along with its advantages and disadvantages.
- v) Explain lytic cycle and lysogeny of viruses
- vi) Describe microbial assay of antibiotics.
- vii) Explain tests used for assessment of microbial spoilage
- viii) Write the detail about the applications of animal cell culture in pharmaceutical industry and research.
- ix) Enlist types of spoilage and give the factors affecting microbial spoilage.

-----END OF THE PAPER-----

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE
End Semester Examination – Winter 2022

Date: 13/02/2023

Course: Second Year B. Pharmacy
Subject Name: Physical Pharmaceutics I
Max Marks: 75

Sem: III
Subject Code: BP302T
Duration: 3 Hr.

Instructions:

1. All questions are compulsory
2. Draw diagrams / figures wherever necessary
3. Figures to right indicate full marks

Q. 1. Objective Type Questions (Answer all the questions) (10 x 2) = 20

- i) Give any four ways to express solubility of a drug.
- ii) Define critical solution temperature. Give its applications.
- iii) Define – desublimation, polymorphism, vapour pressure, latent heat
- iv) Differentiate crystalline and amorphous solid.
- v) Why interfacial tension is less than surface tension?
- vi) Explain HLB scale.
- vii) Give pharmaceutical applications of complexation.
- viii) Give importance of protein binding.
- ix) Write buffer equation and buffer capacity.
- x) Define isotonic solution and paratonic solution.

Q. 2. Long Answers (Answer 2 out of 3) (2 x 10) = 20

- i) Write in detail about Raoult's law with help of following point,
a) statement of law, b) ideal solution and real solution,
c) positive deviation d) negative deviation
- ii) Describe refractive index property of drug molecule. Explain various refractometers used to determine refractive index in detail.
- iii) Describe in detail methods of analysis of complex.

Q. 3. Short Answers (Answer 7 out of 9) (7 x 5) = 35

- i) Explain in detail various factors affecting solubility of gases in liquid.
- ii) What is liquid crystal? Write its classification with properties of it. Give its applications.
- iii) Define aerosol dosage form. Give its merit and demerits. Explain propellant used in aerosol.
- iv) Explain spreading coefficient along with applications.
- v) Describe in detail about capillary rise method for determination of surface

tension.

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- vi) Write in detail about factors affecting protein binding.
- vii) Describe Sorensen's pH scale. Explain sodium chloride equivalent method for the adjustment of tonicity.
- viii) Write a detail note on buffers.
- ix) Write a note on adsorption isotherm for solid surface adsorption.

-----END OF THE PAPER-----

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DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

End Semester Examination – Winter 2022

Course : B. Pharmacy
Subject Name : Medicinal Chemistry-I

Max Marks : 75

Date: 12/02/2023 12/07/2023

Sem: IV

Subject Code: 12/07/23
BP402T

Duration : 3 Hr.

Instructions:

1. All questions are compulsory
2. Draw diagrams / figures wherever necessary
3. Figures to right indicate full marks

Q. 1. One or Two answer sentence (Answer all the questions) (10 x 2) = 20

- i) Describe in detail about Bioisosterism.
- ii) Write down the synthesis of Tolazoline.
- iii) Explain β adrenoreceptors.
- iv) Draw the structure and IUPAC name of Tacarine hydrochloride
- v) How does benzodiazepine affect the action of GABA?
- vi) Write MOA of major tranquillizer
- vii) Why phenytoin does not give sedation through rest drugs of hydantoin class shows sedation
- viii) Write a note on Opioid antagonist.
- ix) Write a MOA of Aspirin
- x) What is partition coefficient?

Q-2. Long Answers (Answer 2 out of 3) (2 x 10) = 20

- i) Discuss the SAR of Sympathomimetic agent and write a note on Biosynthesis & Catabolism of Catecholamine.
- ii) Classify narcotics analgesic. Add a note on SAR and MOA Fentanyl citrate and Methadone hydrochloride.
- iii) Enlist various physicochemical properties affecting the biological activity of drug. Add a note on Phase-I reaction.

Q. 3. Short Answers (Answer 7 out of 9) (7 x 5) = 35

- i) What is mean by drug metabolism? Describe the factors affecting drug metabolism.
- ii) Write a note on biosynthesis and release of acetylcholine.
- iii) Outline the synthesis of Salbutamol and Ibuprofen.

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iv) Classify sedative and hypnotics. Write the SAR and MOA of Barbiturates.

v) Write a note on cholinergic blocking agent. And write the SAR of Ipratropium bromide.

vi) Classify antipsychotic drug. Add a note on Chlorpromazine hydrochloride.

vii) Define epilepsy and describe general mechanism of action of anticonvulsant drug.

viii) Write a note on adrenergic receptor. Classify sympathomimetic drugs with e.g.

ix) Describe the SAR of morphine analogues. Add a note on anti-inflammatory agent.

—END OF THE PAPER—

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DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE
End Semester Examination – Winter 2022

Date: 09/02/2023

Course : B. Pharmacy
Subject Name : Medicinal Chemistry-I
Max Marks : 75

Sem: IV
Subject Code: BP402T
Duration : 3 Hr.

Instructions:

1. All questions are compulsory
2. Draw diagrams / figures wherever necessary
3. Figures to right indicate full marks

Q. 1. Objective Type Questions (Answer all the questions) (10 x 2) = 20

- i) Discuss the importance of partition coefficient in relation to biological activity.
- ii) What are neurotransmitters? Classify them with suitable examples.
- iii) Outline the chemical classification of adrenergic drugs with suitable examples.
- iv) Write the MOA of NSAIDs.
- v) Give the biosynthetic pathway of Acetylcholine.
- vi) Draw structure and IUPAC name of Piroxicam.
- vii) What do you mean by tonic clonic seizures?
- viii) Discuss the factors Stereo chemical aspects in relation to drug metabolism.
- ix) Define and distribute adrenergic receptors.
- x) Differentiate generalized seizures & partial seizures

Q. 2. Long Answers (Answer 2 out of 3) (2 x 10) = 20

- i) Define & classify para sympathomimetic agents with suitable example. Give the SAR, mode of action & chemical features of each class.
- ii) Outline the chemical classification of adrenergic drugs. Discuss their mechanism of action. Comment on the essential structural features required for the optimum activity of such drugs.
- iii) Explain in detailed history and development of medicinal chemistry.

Q. 3. Short Answers (Answer 7 out of 9) (7 x 5) = 35

- i) Outline the synthesis of diazepam and chlorpromazine hydrochloride
- ii) Classify psychotherapeutic drugs with suitable example. . Discuss the SAR of phenothiazine's as tranquilizing agents.
- iii) Discuss the influence of bioisosterism and partition coefficient on biological activity.
- iv) What are synthetic analgesics? Explain the synthesis and uses of methadone hydrochloride.
- v) Define & classify general anesthetics. Write in brief steps involved in general anesthesia.
- vi) Write a note on biosynthesis and catabolism of catecholamine.
- vii) Discuss on different beta receptor antagonists and write the limitations of non- selective beta blockers.

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- viii) What are synthetic analgesics? Explain the synthesis and uses of methadone hydrochloride.
- ix) What are anticholinesterases? Classify & describe the chemistry, MOA & therapeutic uses of the same.

-----END OF THE PAPER-----

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

End Semester Examination – Supplementary Winter 2022

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Course	: B. Pharmacy	Date	: 11/02/2023
Subject Name	: Physical Pharmaceutics II	Sem	: IV
Max Marks	: 75	Subject Code	: BP403T
		Duration	: 3 Hr.

Instructions:

1. All questions are compulsory
2. Draw diagrams / figures wherever necessary
3. Figures to right indicate full marks

Q. 1. Objective Type Questions (Answer all the questions) (10 x 2) = 20

- i) Define angle of repose and give its importance.
- ii) Elaborate the concept of thixotropy.
- iii) Explain any 2 general characteristics of colloidal particles.
- iv) Distinguish between flocculated and deflocculated suspension.
- v) What is first order of reaction?
- vi) Draw HLB scale.
- vii) What measures you will take to improve the flow property of a granules?
- viii) Define gold no and Schulze hardy rule.
- ix) What is the principle of Coulter Counter?
- x) Explain the mechanism of micelles formation.

Q. 2. Long Answers (Answer 2 out of 3) (2 x 10) = 20

- i) What is drug stability? Explain in details accelerated stability testing.
- ii) Define and classify colloidal dispersion. Add a note on comparative properties of different colloidal system.
- iii) Elaborate any 4 derived properties of powder.

Q. 3. Short Answers (Answer 7 out of 9) (7 x 5) = 35

- i) Explain different factors influencing the chemical degradation of pharmaceutical product.
- ii) Differentiate between plastic and elastic deformation. Add a note on Heckel equation.
- iii) Write a note on Non-Newtonian systems
- iv) Enlist different methods to determine particle size and explain any one.
- v) Discuss sedimentation parameter.
- vi) Describe the electrical property of colloidal system.
- vii) Explain application of micrometrics in pharmacy.
- viii) Classify viscometer and explain working principle of Ostwald Viscometer.
- ix) What is emulsion? Explain stability of emulsion.

-----END OF THE PAPER-----

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DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE
End Semester Examination – Winter-2022

Course: B. Pharmacy

Sem: IV

Subject Name: Pharmacology-I

Subject Code: BP404T

Max Marks: 75

Day & Date: Tuesday, 14/02/2023

Time: 02:00 pm to 05:00 pm

Instructions –

1. All questions are compulsory
2. Draw diagrams / figures wherever necessary
3. Figures to right indicate full marks

Q. 1. Objective Type Questions

10 x 2 (Answer all the questions)

1. Explain Pharmacokinetic and Pharmacodynamics.
2. What is enzyme induction phenomenon?
3. Write in brief, role and distribution of 5HT.
4. Enlist the neurotransmitter in CNS.
5. What do you mean by drug receptor interaction?
6. Write merits and demerits of rectal route of drug administration.
7. Define drug addiction and drug dependence.
8. Write in brief the drug treatment in the Alzheimer's disease.
9. What is drug synergism? Give examples.
10. What does the term "bioavailability" mean?

Q. 2. Long Answers

2 x 10 = 20 (Answer 2 out of 3)

1. Describe the mechanisms involved in drug excretion and the factors that influence it.
2. What are Parasympatholytics? Classify Parasympatholytic drugs with suitable examples and explain pharmacology of atropine.
3. Classify antipsychotic drug and explain pharmacology of chlorpromazine.

Q. 3. Short Answers

7 x 5 = 35 (Answer 7 out of 9)

1. Take brief account of adverse drug reaction.
2. Classify Anti-Parkinsonian drugs with examples. Explain the pharmacology of Levodopa.
3. Explain the JAK-STAT binding receptor transduction mechanism.
4. Write the mechanism of action and pharmacology of sodium valproate.

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5. Classify general anesthetic with example and stages of anesthesia.
 6. Discuss pharmacotherapy of Alcoholism.
 7. Classify Opioid analgesics and Explain pharmacology of Morphine.
 8. Explain pharmacology of MAO inhibitors.
 9. Note on Clinical trials.

-----END OF THE PAPER-----

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE			
End Semester Examination – Winter 2022			
Date: 16/02/2023			
Course	: B. Pharmacy	Sem:	IV
Subject Name	: Pharmacognosy & Phytochemistry-I	Subject Code	: BP405T
Max Marks	: 75	Duration	: 3 Hr.
Instructions:			
<ul style="list-style-type: none"> • All questions are compulsory • Draw diagrams / figures wherever necessary • Figures to right indicate full marks 			
Q. 1.	Objective Type Questions (Answer all the questions)	(10 x 2) = 20	
i)	Define. a) Pharmacognosy b) Phytochemistry.		
ii)	Enlist sources of crude drugs with examples.		
iii)	Define a) Dried extracts b) Oleoresins.		
iv)	Write any two general identification tests of Alkaloids.		
v)	Write Biological source and uses of Honey.		
vi)	Define the term allergens with examples.		
vii)	What are Secondary Metabolites?		
viii)	Mention general properties of Volatile oils.		
ix)	Write Chemical constituents and uses of Wool fat.		
x)	Explain the term Plant Hormones.		
Q. 2.	Long Answers (Answer 2 out of 3)	(2 x 10) = 20	
i)	Explain different methods of classification of crude drugs with examples.		
ii)	Define Evaluation of crude drugs. Explain Physical evaluation in detail.		
iii)	Write the principle, diagnosis and treatment involved in Ayurveda and Homeopathy system of medicine.		
Q. 3.	Short Answers (Answer 7 out of 9)	(7 x 5) = 35	
i)	Define, classify and write general properties of Glycosides.		
ii)	Enlist factors affecting Cultivation. Write a note on edaphic factors		
iii)	Explain the concept of Hybridization. Mention its applications.		
iv)	Explain the steps involved in Plant Tissue culture technique.		
v)	What is quantitative microscopy? Write a note on Lycopodium spore method.		

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vi)	Differentiate between organized and unorganized crude drugs.	
vii)	State biological source and chemical constituents of Castor oil and Acacia.	
viii)	Write biological source and preparation method of Gelatin and Papain.	
ix)	Give pharmacognostic account of Cotton.	

-----END OF THE PAPER-----

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DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

End Semester Examination – Summer 2022

Course: B. Pharmacy

Sem:IV

Subject Name: Medicinal Chemistry-I

Subject Code: BP402T

Max Marks: 75

Date:27/08/2022

Duration: 3.45 Hr.

Instructions –

1. All questions are compulsory
2. Answers to MCQs should be written in full sentences
3. Draw diagrams / figures wherever necessary
4. Figures to right indicate full marks

Q. 1. Multiple Choice Questions (MCQs) = 20 x 1 = 20 (All the questions are compulsory)

- i) Gaseous and volatile drugs and their metabolites are excreted through _____.
 - a) Skin
 - b) Lungs
 - c) Billiary route
 - d) Saliva
- ii) Major site of drug metabolism is _____.
 - a) Lung
 - b) Liver
 - c) Skin
 - d) Gastrointestinal tract
- iii) Conversion of alcohols to aldehydes is _____ metabolic reaction.
 - a) Oxidation
 - b) Reduction
 - c) Hydrolysis
 - d) Conjugation.
- iv) Enzyme used for glucuronic acid conjugation is _____.
 - a) Glutathione S-transferase
 - b) UDP-Glucuronyl transferase
 - c) SAM
 - d) PAPS
- v) Henderson-Hasselbalch equation is used to determine _____ of drug.
 - a) Partition Coefficient
 - b) Solubility
 - c) % ionization
 - d) pH.
- vi) % ionisation of drug depends upon _____.
 - a) pKa of the drug
 - b) pH of the body fluid
 - c) Partition coefficient of drug
 - d) Both a. and b.
- vii) β_2 receptors are found in _____.

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c) Tropicamide

d) Glycopyrrolate

xviii) Phenobarbital is orally administered in the treatment of:

a) Grand mal epilepsy

b) Petit mal epilepsy

c) Jackson epilepsy

d) Psychomotor epilepsy.

xix) Which of the following barbiturate derivative acts as anticonvulsant agent?

a) Hexobarbital

b) Phenobarbital

c) Pentobarbital

d) Secobarbital

xx) Which of the following drugs is acts as Cholinergic Blocking agent?

a) Physostigmine

b) Neostigmine

c) Pyridostigmine

d) Dicyclomine

Q. 2. Long Answers = $2 \times 10 = 20$ (Answer 2 out of 3)

i) Discuss the various physicochemical properties affecting the biological activity of drugs.

ii) Classify sedatives and hypnotics. Add a note on SAR and MOA of Barbiturates.

iii) Discuss the SAR of Parasympathomimetic agents and add a note on cholinergic receptors.

Q. 3. Short Answers = $7 \times 5 = 35$ (Answer 7 out of 9)

i) Discuss SAR of sympathomimetic drugs. Add a note on direct acting sympathomimetic drugs.

ii) Describe SAR of Morphine analogues. Add a note on Narcotic antagonists.

iii) Describe the factors that affect drug metabolism.

iv) Define Epilepsy and describe general mechanism of action of anticonvulsant drugs.

v) Classify anticonvulsant drugs and add a note on hydantoin derivatives.

vi) Classify antipsychotic drugs. Add a note on SAR and MOA of phenothiazine derivatives.

vii) Write a note on Biosynthesis and catabolism of catecholamine.

viii) Outline the synthesis of Phenytoin and Barbitol.

ix) Write a note on adrenergic receptor. Classify sympathomimetic drugs with examples

-----END OF THE PAPER-----

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DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE
End Semester Examination – Summer 2022

Course	: B. Pharmacy (Second Year)	Sem.	: IV
Subject Name	: Physical Pharmaceutics-II	Subject Code	: BP403T
Max Marks	: 75	Date:30/08/2022	Duration : 3.45 Hr

Instructions –

1. All questions are compulsory
2. Answers to MCQs should be written in full sentences
3. Draw diagrams / figures wherever necessary
4. Figures to right indicate full marks

Q.No.1. Attempt the following Multiple choice questions. (MCQs) (20X 1= 20 Marks)
(All the questions are compulsory)

- i. Gold number is defined as number of milligram of protective colloid required in 10 mL of red gold sol to prevent the change in colour from red to violet on addition of 1 mL of..... Solution.
 - a. 10 % NaCl
 - b. 0.1 % NaCl
 - c. 10 % KCl
 - d. 0.1 % KCl
- ii. Sedimentation velocity of spherical particles is governed by.....
 - a. Charle's Law
 - b. Stoke's Law
 - c. Osmotic Pressure
 - d. None of the above
- iii. is the difference in the potential between the shear plane & the electroneutral region in the dispersion
 - a. Peptization
 - b. Nernst potential
 - c. Electrokinetic Potential
 - d. Steady State
- iv. For an ideal suspension, the sedimentation volume should be...
 - a. Zero
 - b. Less than 1
 - c. More than 1
 - d. Equal to 1
- v.is the process of formation of light, fluffy aggregates held together by physical forces.
 - a. Flocculation
 - b. Deflocculation
 - c. Coalescence
 - d. All of these
- vi. $\eta_1 = t (S_b - S_f) B$ is used for viscosity determination by using.....viscometer
 - a. Capillary
 - b. Falling Sphere
 - c. Cup & Bob
 - d. Cone & Plate

- vii. Shear thickening system is also known as.....flow
- Plastic
 - Pseudoplastic
 - Dilatant
 - Spurs
- viii. $\mu = \frac{\text{Lateral Strain}}{\text{Linear Strain}}$
- Elastic modulus
 - Hookes law
 - Heckel equation
 - Poisson's ratio
- ix. The reciprocal of viscosity is known as.....
- Fluidity
 - Mobility
 - Ductility
 - Plug flow
- x. The change in velocity between two planes of liquid which is separated by distance is
- Shearing stress
 - Rate of shear
 - Strain
 - Yield value
- xi. The unit of specific reaction rate constant for Second order reaction is
- Litre Moles⁻¹ Second⁻²
 - Litre Moles⁻¹ Second⁻¹
 - Second⁻¹
 - Moles Litre⁻¹ Second⁻¹
- xii. Wet gum method is also known as
- Continental Method
 - Forbe's method
 - English method
 - Bottle method
- xiii. A drug suspension decomposes by zero-order kinetics with a rate constant of 2 mg mL⁻¹ month⁻¹. If the initial concentration is 100 mg mL⁻¹, what is the shelf life?
- 2 months
 - 3 months
 - 4 months
 - 5 months
- xiv. -----is the ability of a pharmaceutical product to retain the physical, chemical, microbiological and biopharmaceutical properties
- Drug stability
 - Chemical kinetics
 - Order of reaction
 - Micromeritics
- xv. Hausner ratio is
- Tapped Density/Bulk density
 - Bulk density/ Tapped Density
 - Bulk Density/ Void volume
 - Void volume/ Bulk Density
- xvi. Which of the following is the identification test for emulsion
- Dilution Test
 - Cobalt Chloride test
 - Conductivity Test
 - All of the Above

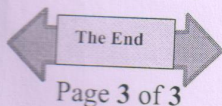
- xvii. The density of the dispersed phase is more than that of the dispersion medium. According to Stoke's equation, the creaming is:
- At the center of emulsion
 - In both the directions
 - In upward direction
 - In downward direction
- xviii. The rate equation for a chemical reaction is reported as $(-dc/dt)=kc$. The order of reaction is....
- Zero order
 - Pseudo Zero order
 - Pseudo first order
 - First order
- xix. The Carr's compressibility index value 26 - 31 indicate that the flow will be...
- Excellent
 - Passable
 - Good
 - Poor
- xx. In coulter-counter method, as the particles travelled through the orifice the event that occurs is...
- Conductance between the electrodes increases
 - Electronic scanners produces photographs for volume measurement
 - Resistance between the electrodes increase
 - Sedimentation increase

Q.No.2 Solve any TWO from following questions (Long Answers) (2 X 10 = 20 Marks)

- What is rheology and elaborate different types of flows in liquids.
- What are the properties of colloids? Explain electrical properties in detail.
- What is Molecularity & Order of Reaction? Explain the different methods used for determination of 'order of reaction'.

Q.No.3 Solve any SEVEN from following questions (Short Answers) (7 X 5 = 35 Marks)

- Define following terms:
a. Angle of repose b. Porosity, c. True density d. Electrophoresis e. Stability testing
- Explain the Van't Hoff equation.
- Describe different types of Particle diameters.
- Differentiate between Plastic & Elastic deformation. Add a note on Heckel equation.
- Elaborate the concept of Thixotropy.
- Derive the derivation of Zero order reaction rate constant.
- Explain the importance of Micrometrics in pharmacy with the help of suitable examples.
- Explain the concept of Controlled Flocculation.
- Write a detail note on Accelerated stability testing for pharmaceutical products.



DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

Supplementary Semester Examination – Summer 2022

Course: B. Pharmacy

Sem : IV

Subject Name: Pharmacognosy & Phytochemistry – I

Subject Code: BP405T

Max Marks: 75

Date: 08/09/2022

Duration: 3.45 Hr.

Instructions –

- All questions are compulsory
- Answers to MCQs should be written in full sentences
- Draw diagrams / figures wherever necessary
- Figures to right indicate full marks

Q. 1. Multiple Choice Questions (MCQs) = 20 x 1 = 20 (All the questions are compulsory)

1. Which of these is an organized drug?
 - a) Senna
 - b) Gelatin
 - c) Papain
 - d) Benzoin
2. Glycosides are condensation products of
 - a) Sugar+protein
 - b) Sugar+ lipid
 - c) Sugar+agyclone
 - d) Sugar+alkaloid
3. Stomatal number is number of stomata per----- of epidermis of leaf.
 - a) sq.m
 - b) sq.mm
 - c) sq.km
 - d) sq.cm
4. Size of lycopodium spore is _____
 - a) 20 micron
 - b) 30 micron
 - c) 25 micron
 - d) 35 micron
5. _____ is considered as father of medicine.
 - a) Hippocrates
 - b) Aristotle
 - c) Dioscorides
 - d) Charaka
6. Taste and colour of agar comes under _____ evaluation of drug.
 - a) Chemical
 - b) Biological
 - c) Organoleptic
 - d) Physical
7. Hemp contains

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- a) High cellulose and low protein b) High cellulose and low lignin c)
High lignin and low cellulose d) High lignin and low protein

8. Acid value is defined as

- a) number of kilogram of KOH required to neutralise 1 g of fat or oil
b) number of milligram of KOH required to neutralise 1 g of fat or oil
c) number of gram of KOH required to neutralise 1 g of fat or oil
d) number of ml of KOH required to neutralise 1 g of fat or oil

9. _____ belongs to the family of Apidae.

- a) Agar b) Acacia c) Tragacanth d) Honey

10. Waxes are example of.....

- a) Simple lipids b) Compound lipids c) Derived lipids d) Prostaglandins

11. Goldbeaters skin test is used for identification of.....

- a) Carbohydrates b) Lipids c) Tannins d) Glycosides

12. Tissue Culture medium should not be containing-----

- a) Pesticides b) Inorganic salts c) Vitamins d) Growth regulators

13. Indian origin therapy is

- a) Homeopathy b) Unani c) Allopathy d) Ayurveda

14. _____ oil is having laxative property

- a) Arachis oil b) Sesame oil c) Castor oil d) Corn oil

15. One of the four humours is

- a) White bile b) Phlegm c) Air d) Water

16. Fabric is prepared from.....

- a) Chitin b) Cellulose c) Hemicellulose d) None of these

17. Citral gum is used as adulterant of.....

- a) Acacia b) Agar c) Gelatin d) Tragacanth

18. Siddha medicine system originated from

- a) Karnataka b) Kerala c) Tamil Nadu d) Telangana

19. Sowing of rhizomes is

- a) Vegetative propagation b) seed propagation
c) sexual propagation d) Tissue culture

20. Bassorin is.....

- a) Water soluble b) Alcohol soluble c) Alcohol insoluble d) Water insoluble

Q. 2. Long Answers:

2 x 10 = 20 (Answer 2 out of 3)

- a) What is cultivation? Explain the factors affecting cultivation of crude drugs.
b) Define Evaluation. Explain microscopic evaluation.
c) Define tissue culture. Explain the steps involved in Tissue culture. Mention its application.

Q. 3. Short Answers:

7 x 5 = 35 (Answer 7 out of 9)

- a) Define, classify and mention the identification tests for alkaloids.
b) Write the principle, diagnosis and treatment involved in Ayurveda.
c) What is Pharmacological classification of crude drugs? Mention its merits and demerits with examples.
d) State the biological source, chemical constituents of Tragacanth and Honey
e) Illustrate the pharmacognostic scheme on Cotton.
f) Differentiate between organized and unorganized crude drugs.
g) Explain the concept of polyploidy. Mention its applications.
h) Write a note on edible vaccines.
i) Define Pharmagonosy. Explain its scope and development.

-----END OF THE PAPER-----

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

End Semester Examination – Summer 2022

Course: B. Pharmacy

Sem: IV

Subject Name: Pharmacology - I

Subject Code: BP404T

Max Marks: 75

Date: 06/09/2022

Duration: 3.45 Hr.

Instructions –

1. All questions are compulsory
2. Answers to MCQs should be written in full sentences
3. Draw diagrams / figures wherever necessary
4. Figures to right indicate full marks

Q. 1. Multiple Choice Questions (MCQs) = 20 x 1 = 20 (All the questions are compulsory)

- i) Pharmacokinetics involves study of the _____ of a drug.
- a) Side effects
 - b) Mechanism of action
 - c) Distribution
 - d) Therapeutic effects
- ii) By which route of administration, the extensive first-pass metabolism of the drugs occurs?
- a) Oral
 - b) Intravenous
 - c) Intramuscular
 - d) Inhalation
- iii) Which is the fastest route of administration in terms of the effect of a drug?
- a) Intramuscular
 - b) Subcutaneous
 - c) Intravenous
 - d) Intradermal
- iv) Which organ is involved in the excretion of the drugs?
- a) Heart
 - b) Spleen
 - c) Brain
 - d) Kidney
- v) Which statement is CORRECT for the agonist?
- a) It binds to a receptor and produces the biological effect
 - b) It binds to a receptor and does not produce the biological effect
 - c) It binds to a receptor and produces the biological effect opposite to that of the natural ligand
 - d) None of the above
- vi) On repeated use if the effect of a drug decreases progressively, the mechanism is called
- a) Antagonism
 - b) Tolerance
 - c) Anaphylaxis
 - d) Synergism

vii) The ability of a drug to cause abnormalities in the developing fetus when administered to a pregnant woman is called _____.

- a) Teratogenicity
- b) Tachyphylaxis
- c) Superinfection
- d) Anaphylaxis

viii) Clinical trials are carried out in _____.

- a) Rats
- b) Mice
- c) Rabbits
- d) Humans

ix) Which is an adrenergic receptor?

- a) Nicotinic receptor
- b) Mu receptor
- c) Beta receptor
- d) GABA-A receptor

x) Which drug is used for the treatment of myasthenia gravis?

- a) Neostigmine
- b) Atropine
- c) Donepezil
- d) Rivastigmine

xi) Which of the following is NOT the effect of acetylcholine?

- a) Miosis
- b) Increase in rate and force of contraction of the heart
- c) Bronchoconstriction
- d) Gastric acid secretion

xii) By inhibiting which ion channels local anesthetics block nerve conduction?

- a) Na^+
- b) Mg^{2+}
- c) Ca^{2+}
- d) Cl^-

xiii) Which adverse effect is associated with chronic alcoholism?

- a) Fatty liver
- b) Gastritis
- c) Impotency
- d) All of the above

xiv) Disulfiram is used for the treatment of _____ dependence.

- a) Opioid
- b) Nicotine
- c) Alcohol
- d) Benzodiazepine

xv) Sympathetic hyperactivity associated with anxiety disorders can be treated by _____.

- a) Propranolol
- b) Oxazepam
- c) Alprazolam
- d) Chlordiazepoxide

xvi) Which of the following drug is an opioid antagonist?

- a) Methadone
- b) Naloxone
- c) Ephedrine
- d) Fentanyl

xvii) Which drug is used as a first-line drug in the absence seizures?

- a) Phenytoin
- b) Carbamazepine
- c) Ethosuximide
- d) All of the above

xviii) Which is the common adverse effect of selective serotonin reuptake inhibitors (SSRIs)?

- a) Hypotension
c) Seizures
- b) Sexual dysfunction
d) Arrhythmia

xix) Which antiviral drug is used in the treatment of Parkinson's disease?

- a) Entacapone
c) Bromocriptine
- b) Amantadine
d) Selegiline

xx) Which centrally acting anticholinesterase is not approved for Alzheimer's disease?

- a) Rivastigmine
c) Galantamine
- b) Donepezil
d) Physostigmine

Q. 2. Long Answers) = 2 x 10 = 20 (Answer 2 out of 3)

- i) Define drug absorption. Explain the factors affecting drug absorption.
- ii) Define neurohumoral transmission. Explain different steps involved in the neurohumoral transmission of acetylcholine.
- iii) Classify antipsychotic drugs. Explain the mechanism of action, uses, and side effects of chlorpromazine.

Q. 3. Short Answers = 7 x 5 = 35 (Answer 7 out of 9)

- i) Define drug. Write different sources of drugs with suitable examples.
- ii) Write the advantages and disadvantages of the oral route of drug administration.
- iii) Classify receptors with suitable examples. Draw a schematic diagram showing G protein-coupled receptors signaling pathway.
- iv) Explain pharmacotherapy of glaucoma.
- v) Classify cholinergic receptors, and give their distribution.
- vi) Write the mechanism of action of benzodiazepines. Why benzodiazepines are preferred over barbiturates?
- vii) Describe different stages of inhalational general anesthesia.
- viii) Classify drugs used for the treatment of Alzheimer's disease. Explain the mechanism of action of memantine.
- ix) Classify antiparkinsonian drugs. Why levodopa is given in combination with carbidopa?

-----END OF THE PAPER-----

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DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE
End Semester Examination – Summer 2022

Course	: B. Pharmacy (Second Year)	Sem.	: IV
Subject Name	: Physical Pharmaceutics-II	Subject Code	: BP403T
Max Marks	: 75	Date:30/08/2022	Duration : 3.45 Hr

Instructions –

1. All questions are compulsory
2. Answers to MCQs should be written in full sentences
3. Draw diagrams / figures wherever necessary
4. Figures to right indicate full marks

Q.No.1. Attempt the following Multiple choice questions. (MCQs) (20X 1= 20 Marks)
(All the questions are compulsory)

- i. Gold number is defined as number of milligram of protective colloid required in 10 mL of red gold sol to prevent the change in colour from red to violet on addition of 1 mL of..... Solution.
 - a. 10 % NaCl
 - b. 0.1 % NaCl
 - c. 10 % KCl
 - d. 0.1 % KCl
- ii. Sedimentation velocity of spherical particles is governed by.....
 - a. Charle's Law
 - b. Stoke's Law
 - c. Osmotic Pressure
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 - a. Peptization
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 - c. Electrokinetic Potential
 - d. Steady State
- iv. For an ideal suspension, the sedimentation volume should be...
 - a. Zero
 - b. Less than 1
 - c. More than 1
 - d. Equal to 1
- v.is the process of formation of light, fluffy aggregates held together by physical forces.
 - a. Flocculation
 - b. Deflocculation
 - c. Coalescence
 - d. All of these
- vi. $\eta_{sp}/c = (\eta_{sp}/c)_{\infty} + B \eta_{sp}/c$ is used for viscosity determination by using.....viscometer
 - a. Capillary
 - b. Falling Sphere
 - c. Cup & Bob
 - d. Cone & Plate

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- vii. Shear thickening system is also known as.....flow
 a. Plastic
 b. Pseudoplastic
 c. Dilatant
 d. Spurs
- viii. $\mu = \frac{\text{Lateral Strain}}{\text{Linear Strain}}$
 a. Elastic modulus
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 c. Heckel equation
 d. Poisson's ratio
- ix. The reciprocal of viscosity is known as.....
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 c. Ductility
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 b. Rate of shear
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 a. Litre Moles⁻¹ Second⁻²
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- xii. Wet gum method is also known as
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 b. Forbe's method
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- xiii. A drug suspension decomposes by zero-order kinetics with a rate constant of 2 mg mL⁻¹ month⁻¹. If the initial concentration is 100 mg mL⁻¹, what is the shelf life?
 a. 2 months
 b. 3 months
 c. 4 months
 d. 5 months
- xiv. _____ is the ability of a pharmaceutical product to retain the physical, chemical, microbiological and biopharmaceutical properties
 a. Drug stability
 b. Chemical kinetics
 c. Order of reaction
 d. Micromeritics
- xv. Hausner ratio is
 a. Tapped Density/Bulk density
 b. Bulk density/ Tapped Density
 c. Bulk Density/ Void volume
 d. Void volume/ Bulk Density
- xvi. Which of the following is the identification test for emulsion
 a. Dilution Test
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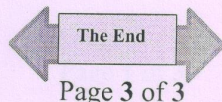
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- At the center of emulsion
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 - In downward direction
- xviii. The rate equation for a chemical reaction is reported as $(-dc/dt)=kc$.
The order of reaction is....
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 - Pseudo Zero order
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- xix. The Carr's compressibility index value 26 - 31 indicate that the flow will be...
- Excellent
 - Passable
 - Good
 - Poor
- xx. In coulter-counter method, as the particles travelled through the orifice the event that occurs is...
- Conductance between the electrodes increases
 - Electronic scanners produces photographs for volume measurement
 - Resistance between the electrodes increase
 - Sedimentation increase

Q.No.2 Solve any TWO from following questions (Long Answers) (2 X 10 = 20 Marks)

- What is rheology and elaborate different types of flows in liquids.
- What are the properties of colloids? Explain electrical properties in detail.
- What is Molecularity & Order of Reaction? Explain the different methods used for determination of 'order of reaction'.

Q.No.3 Solve any SEVEN from following questions (Short Answers) (7 X 5 = 35 Marks)

- Define following terms:
a. Angle of repose b. Porosity, c. True density d. Electrophoresis e. Stability testing
- Explain the Van't Hoff equation.
- Describe different types of Particle diameters.
- Differentiate between Plastic & Elastic deformation. Add a note on Heckel equation.
- Elaborate the concept of Thixotropy.
- Derive the derivation of Zero order reaction rate constant.
- Explain the importance of Micrometrics in pharmacy with the help of suitable examples.
- Explain the concept of Controlled Flocculation.
- Write a detail note on Accelerated stability testing for pharmaceutical products.



End Semester Examination – Summer 2022

Sem:IV

Subject Code: BP402T

Date:27/08/2022

Duration: 3.45 Hr.

1. All questions are compulsory
2. Answers to MCQs should be written in full sentences
3. Draw diagrams / figures wherever necessary
4. Figures to right indicate full marks

i) Gaseous and volatile drugs and their metabolites are excreted through

- a) Skin b) Lungs
c) Billiary route d) Saliva

ii) Major site of drug metabolism is

- a) Lung
b) Liver
c) Skin
d) Gastrointestinal tract

iii) Conversion of alcohols to aldehydes is _____ metabolic reaction.

- a) Oxidation
c) Hydrolysis
- b) Reduction
d) Conjugation.

iv) Enzyme used for glucuronic acid conjugation is _____.

- a) Glutathione S-transferase b) UDP-Glucuronyl transferase
c) SAM d) PAPS

v) Henderson-Hasselbalch equation is used to determine pH of drug.

- a) Partition Coefficient b) Solubility
c) % ionization d) pH.

vi) % ionisation of drug depends upon _____.

- a) pKa of the drug b) pH of the body fluid
c) Partition coefficient of drug d) Both a. and b.

vii) β_2 receptors are found in_____.

- a) Heart
b) Bronchi
c) Adipose tissue
d) Skeletal muscles.
- viii) Muscarinic receptors are _____ receptor.
a) Nuclear
b) G-protein Coupled
c) Enzyme
d) Ligand gated Ion Chanel.
- ix) Which of the following drug is a direct acting sympathomimetic drug.
a) Phenylephrine
b) Pseudoephedrine
c) Propylhexedrine
d) Ephedrine
- x) Which of the drug is alpha adrenergic blocker?
a) Propranolol
b) Metibranolol
c) Atenolol
d) Tolazoline
- xi) Acetylcholine on hydrolysis gives....
a) Serine and acetic acid
b) Choline and carbamic acid
c) Acetic acid and serine
d) Choline and acetic acid
- xii) Chlordiazepoxide, a psychotherapeutic agent belongs to class of _____.
a) Carbamates
b) Propanediol
c) Benzodiazepine
d) Phenothiazine.
- xiii) Acetylcholine is biosynthesized from _____.
a) L-Cysteine
b) L-Codeine
c) L-Serine
d) L-Cholic acid
- xiv) Hypnotics are _____.
a) Strong depressant of CNS
b) Strong stimulant of CNS
c) Mild depressant of CNS
d) Mild stimulant of CNS
- xv) Chemical name 5-ethyl, 5-phenyl barbituric acid belong to
a) Hexobarbital
b) Phenobarbital
c) Pentobarbital
d) Secobarbital
- xvi) Which one of the following receptor is block by Neuroleptic agent?
a) Cholinergic
b) Adrenergic
c) GABA
d) Dopaminergic
- xvii) Which of the Anticholinergic agent useful as a spasmolytic drug?
a) Pyridostigmine
b) Dicyclomine

d) Glycopyrrolate

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- a) Grand mal epilepsy
b) Petit mal epilepsy
c) Jackson epilepsy
d) Psychomotor epilepsy.

d) Psychomotor epilepsy.

- a) Hexobarbital b) Phenobarbital
c) Pentobarbital d) Secobarbital

d) Secobarbital

- a) Physostigmine
b) Neostigmine
c) Pyridostigmine
d) Dicyclomine

d) Dicyclomine

- i) Discuss the various physicochemical properties affecting the biological activity of drugs.
- ii) Classify sedatives and hypnotics. Add a note on SAR and MOA of Barbiturates.
- iii) Discuss the SAR of Parasympathomimetic agents and add a note on cholinergic receptors.

2 out of 3)

- i) Discuss SAR of sympathomimetic drugs. Add a note on direct acting sympathomimetic drugs.
- ii) Describe SAR of Morphine analogues. Add a note on Narcotic antagonists.
- iii) Describe the factors that affect drug metabolism.
- iv) Define Epilepsy and describe general mechanism of action of anticonvulsant drugs.
- v) Classify anticonvulsant drugs and add a note on hydantoin derivatives.
- vi) Classify antipsychotic drugs. Add a note on SAR and MOA of phenothiazine derivatives.
- vii) Write a note on Biosynthesis and catabolism of catecholamine.
- viii) Outline the synthesis of Phenytoin and Barbitol.
- ix) Write a note on adrenergic receptor. Classify sympathomimetic drugs with examples

-----END OF THE PAPER-----

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

End Semester Examination – Summer 2020

Course: B. Pharmacy

Sem: IV

Subject Name: Pharmaceutical Organic Chemistry-III

Subject Code: BP401T

Max Marks: 75

Date: 24/08/2022

Duration: 3.45 Hrs.

Instructions –

1. All questions are compulsory
2. Answers to MCQs should be written in full sentences
3. Draw diagrams / figures wherever necessary
4. Figures to right indicate full marks

I. Multiple Choice Questions

(20 Marks)

- 1) Which of the following prefix is used for Sulphur?
a) Oxa b) Aza c) Thia d) Sila
- 2) Number of optical active isomers in tartaric acid are
a) 2 b) 4 c) 6 d) 8
- 3) Furan react with Ammonia in the presence of aluminum trioxide at 400°C to give
a) Pyridine b) Furfural c) Pyrrole d) Furoic acid
- 4) Enantiomers are ---
a) Mirror images of each other b) Not mirror images of each other
c) Not concern with mirror images d) Diastereomers of each other
- 5) Suffix used for three membered heterocyclic saturated compound containing N is
a) Etidine b) Epidine c) Iridine d) Inidine
- 6) Notation used for dextro rotatory compounds is
a) D b) L c) d d) l
- 7) Electrophilic substitution in Thiophene usually occurs at
a) O atom b) C-2 Position c) C-3 Position d) Both A&B
- 8) Which of the following reagent reacts with pyrrole to form 2-formylpyrrole
a) HCOOH b) CHCl_3 & KOH c) H_2O_2 d) $(\text{CH}_3\text{CO})_2\text{O}$
- 9) Conversion of ketoximes to N-substituted amides takes place in ----- reaction
a) Beckmann b) Birch c) Claisen Schmidt d) Dakin

- 10)) n-Propyl alcohol and isopropyl alcohol are examples of isomerism.
 a) Functional b) Position c) Chain d) Metamerism
- 11) In -----synthesis 1,4- diketone is used as starting material
 a) Fiest Benary b) Paal Knorr c) Traube d) Bischler
- 12) The synonym for pyrrole is _____.
 a) Furan b) Pyrrole c) Pyridine d) Benzopyridine
- 13) Thiophene contains following heteroatom
 a) S b) N c) O d) C
- 14) Following is the core component in structure of chloroquine
 a) Isoquinoline b) Quinoline c) Thiophene d) Pyridine
- 15) Pyridine is ----- in nature
 a) Weakly acidic b) Weakly basic c) Strong Acidic d) Neutral
- 16) What is the order of reactivity of pyrrole, furan & thiophene towards electrophile
 a) furan, pyrrole, thiophene b) pyrrole, furan, thiophene
 c) thiophene, pyrrole, furan d) furan, thiophene, pyrrole
- 17) Zinc amalgam & HCl is used as reagent in
 a) Wolf-Kishner reduction b) Clemmensen reduction c) Birch reduction d) Dakin reaction
- 18) Wolff Kishner reduction mechanism begins with the formation of a
 a) Hydride ion b) Hydrazone anion c) Nitrogen anion d) Nitrogen cation
- 19) ----- isomerism is observed in doubly bonded compounds
 a) Structural b) Stereo c) Geometrical d) Optical
- 20) Identify the chiral molecule among the following
 a) Isopropyl alcohol b) 2-pentanol c) 1-bromo 3-butene d) Isobutyl alcohol

II. Long Answers (Answer any Two)

(20 Marks)

- 1) Define and explain with examples the asymmetric synthesis.
- 2) Explain in detail conformations and conformational analysis of n-Butane and Cyclohexane.
- 3) Give principle, reaction and mechanism of Birch reduction and Wolf Kishner reduction.

III. Short Answers (Answer any Seven)

(35 Marks)

- 1) Define Biphenyl compounds and explain atropisomerism.
- 2) Explain the elements of symmetry with suitable examples.
- 3) Define Stereospecific reaction and explain it with examples.

- 4) Write the EAS reactions and medicinal uses of furan.
- 5) Write methods of preparation & reactions of Thiophene.
- 6) Give reaction mechanism of Paal-Knorr synthesis in pyrrole.
- 7) Why pyridine is much basic than pyrrole; explain on the basis of resonance.
- 8) Outline the method of synthesis of Indole.
- 9) Write methods of preparation & medicinal uses of pyrimidine.

-----END OF THE PAPER-----

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

End Semester Examination – Summer 2020

Course: B. Pharmacy

Sem: IV

Subject Name: Pharmaceutical Organic Chemistry-III

Subject Code: BP401T

Max Marks: 75

Date: 24/08/2022

Duration: 3.45 Hrs.

Instructions –

1. All questions are compulsory
2. Answers to MCQs should be written in full sentences
3. Draw diagrams / figures wherever necessary
4. Figures to right indicate full marks

I. Multiple Choice Questions

(20 Marks)

- 1) Which of the following prefix is used for Sulphur?
a) Oxa b) Aza c) Thia d) Sila
- 2) Number of optical active isomers in tartaric acid are
a) 2 b) 4 c) 6 d) 8
- 3) Furan react with Ammonia in the presence of aluminum trioxide at 400°C to give
a) Pyridine b) Furfural c) Pyrrole d) Furoic acid
- 4) Enantiomers are ---
a) Mirror images of each other b) Not mirror images of each other
c) Not concern with mirror images d) Diastereomers of each other
- 5) Suffix used for three membered heterocyclic saturated compound containing N is
a) Etidine b) Epidine c) Iridine d) Inidine
- 6) Notation used for dextro rotatory compounds is
a) D b) L c) d d) l
- 7) Electrophilic substitution in Thiophene usually occurs at
a) O atom b) C-2 Position c) C-3 Position d) Both A&B
- 8) Which of the following reagent reacts with pyrrole to form 2-formylpyrrole
a) HCOOH b) CHCl₃ & KOH c) H₂O₂ d) (CH₃CO)₂O
- 9) Conversion of ketoximes to N-substituted amides takes place in ----- reaction
a) Beckmann b) Birch c) Claisen Schmidt d) Dakin

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- 10) n-Propyl alcohol and isopropyl alcohol are examples of isomerism.
 a) Functional b) Position c) Chain d) Metamerism
- 11) In -----synthesis 1,4- diketone is used as starting material
 a) Fiest Benary b) Paal Knorr c) Traube d) Bischler
- 12) The synonym for pyrrole is _____.
 a) Furan b) Pyrrole c) Pyridine d) Benzopyridine
- 13) Thiophene contains following heteroatom
 a) S b) N c) O d) C
- 14) Following is the core component in structure of chloroquine
 a) Isoquinoline b) Quinoline c) Thiophene d) Pyridine
- 15) Pyridine is ----- in nature
 a) Weakly acidic b) Weakly basic c) Strong Acidic d) Neutral
- 16) What is the order of reactivity of pyrrole, furan & thiophene towards electrophile
 a) furan, pyrrole, thiophene b) pyrrole, furan, thiophene
 c) thiophene, pyrrole, furan d) furan, thiophene, pyrrole
- 17) Zinc amalgam & HCl is used as reagent in
 a) Wolf-Kishner reduction b) Clemmensen reduction c) Birch reduction d) Dakin reaction
- 18) Wolff Kishner reduction mechanism begins with the formation of a
 a) Hydride ion b) Hydrazone anion c) Nitrogen anion d) Nitrogen cation
- 19) ----- isomerism is observed in doubly bonded compounds
 a) Structural b) Stereo c) Geometrical d) Optical
- 20) Identify the chiral molecule among the following
 a) Isopropyl alcohol b) 2-pentanol c) 1-bromo 3-butene d) Isobutyl alcohol

II. Long Answers (Answer any Two)

(20 Marks)

- 1) Define and explain with examples the asymmetric synthesis.
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III. Short Answers (Answer any Seven)

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