

No. of Pages: 03

Roll No.....

A-1501

B. Pharmacy I Semester Examinations (August 2026)
Human Anatomy & Physiology-I (BP101T)

Time- 3 hrs
Max. Marks-75

The paper is divided into 3 parts: A, B, and C. All parts are compulsory.

1. Part A contains 20 Multiple Choice Questions (MCQs), all are compulsory. Each question carries 1 mark.
2. Part B contains 3 Long Answer Questions, out of which you must attempt any 2. Each question carries 10 marks.
3. Part C contains 9 Short Answer Questions, out of which you must attempt any 7. Each question carries 5 marks.

PART A: Multiple Choice Questions

1.
 - i Which is the smallest structural unit of the body?
 - a Tissue
 - b Organ
 - c Cell
 - d Organ system
 - ii The maintenance of internal environment of body is called:
 - a Metabolism
 - b Homeostasis
 - c Digestion
 - d Respiration
 - iii Which organelle controls cellular activities?
 - a Nucleus
 - b Golgi apparatus
 - c ER
 - d Lysosome
 - iv Mitosis produces:
 - a Four cells
 - b Two identical cells
 - c Gametes
 - d Spores
 - v Epithelial tissue mainly performs:
 - a Movement
 - b Protection
 - c Blood formation
 - d Conduction
 - vi Skin is the largest:
 - a Bone
 - b Organ
 - c Muscle
 - d Gland
 - vii Axial skeleton includes:
 - a Limbs
 - b Skull and vertebral column
 - c Pelvic girdle
 - d Shoulder girdle
 - viii Bone-forming cells are:
 - a Osteoclasts
 - b Osteoblasts
 - c Chondrocytes
 - d Fibroblasts
 - ix Functional unit of skeletal muscle is:
 - a Sarcomere
 - b Neuron
 - c Osteon
 - d Alveolus

- x Neurotransmitter present at neuromuscular junction is:
 a Dopamine b Serotonin
 c Acetylcholine d GABA
- xi Plasma forms approximately:
 a 25% b 35%
 c 55% d 75%
- xii WBCs mainly provide:
 a Immunity b Oxygen transport
 c Clotting d Digestion
- xiii Vitamin B12 deficiency causes:
 a Pernicious anemia b Diabetes
 c Hypertension d Arthritis
- xiv Tonsils are part of:
 a Digestive system b Lymphatic system
 c Respiratory system d Endocrine system
- xv Peripheral nervous system includes:
 a Brain only b Spinal cord only
 c Cranial and spinal nerves d Cerebellum
- xvi Rest and digest response is mediated by:
 a Sympathetic b Parasympathetic
 c Somatic d Motor
- xvii Rod cells are responsible for:
 a Color vision b Dim-light vision
 c Taste d Hearing
- xviii Capillaries are mainly responsible for:
 a Pumping blood b Exchange of substances
 c Clotting d Immunity
- xix Cardiac output equals:
 a Stroke volume $\times$ Heart rate b Pulse $\times$ BP
 c $HR \div SV$ d BP $\times$ Pulse
- xx Bradycardia means:
 a Fast heart rate b Slow heart rate
 c High BP d Low BP

Part B: Long Answer Questions

- 2) Describe the structure and functions of a typical animal cell with a neat labelled diagram.
- 3) Explain the structure and functions of the autonomic nervous system.
- 4) Explain the conduction system of the heart and discuss the mechanism of heartbeat generation.

Part C: Short Answer Questions

- 5) Describe the levels of structural organization of the human body with suitable examples and diagrams.
- 6) Describe the regulation of heart rate by the autonomic nervous system.
- 7) Explain the origin, classification and functions of cranial nerves.
- 8) Explain the mechanism of blood coagulation and discuss the factors affecting coagulation.
- 9) Describe the organization of skeletal muscle with a neat labeled diagram.
- 10) Explain the structure, types and functions of cell junctions.
- 11) Describe the anatomy and physiology of the nose OR tongue and explain their sensory functions.
- 12) Explain cardiac output and discuss the factors affecting cardiac output.
- 13) Describe the structure and physiology of the neuromuscular junction.

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No. of Pages: 03
Roll No.....

A-1502
B. Pharmacy I Semester Examinations (August 2026)
Pharmaceutical Analysis-I (BP102T)

Time- 3 hrs
Max. Marks-75

The paper is divided into 3 parts: A, B, and C. All parts are compulsory.

1. Part A contains 20 Multiple Choice Questions (MCQs), all are compulsory. Each question carries 1 mark.
2. Part B contains 3 Long Answer Questions, out of which you must attempt any 2. Each question carries 10 marks.
3. Part C contains 9 Short Answer Questions, out of which you must attempt any 7. Each question carries 5 marks.

PART A: Multiple Choice Questions

1.
 - i Which one of the following is a secondary standard?
 - a Na_2CO_3
 - b Oxalic Acid
 - c KMnO_4
 - d AgNO_3
 - ii The Lewis theory defines acid as a species that
 - a Donates proton
 - b Accepts electron pair
 - c Donates electron pair
 - d Accepts proton
 - iii The indicator used in Mohr's method is
 - a Potassium chromate
 - b Ferric alum
 - c Fluorescein
 - d Starch
 - iv EDTA forms complex with metals in
 - a 1:1
 - b 1:2
 - c 2:1
 - d 4:1
 - v The process of digesting precipitate improves
 - a Solubility
 - b Crystallinity
 - c Sensitivity
 - d pH
 - vi Unit of conductance is
 - a Mho
 - b Siemens
 - c Volt
 - d Ampere
 - vii Which electrode is used as a reference electrode?
 - a Calomel
 - b Glass
 - c Dropping mercury
 - d Oxygen
 - viii A potentiometric titration involves measurement of
 - a Absorbance
 - b Conductance
 - c Potential
 - d Temperature
 - ix In iodimetry, the titrant is
 - a Iodine
 - b Sodium thiosulphate

- | | | |
|-------|---|---------------------------|
| | c Potassium iodide | d Iodate |
| x | The equivalent weight of acid is equal to | |
| | a Molar mass/basicity | b Molar mass x normality |
| | c Moles x valency | d None |
| xi | A primary standard is | |
| | a Highly pure | b Stable substance |
| | c Both a & b | d None |
| xii | The Bronsted lowry theory defines acid as a species that | |
| | a Donates proton | b Accepts electron pair |
| | c Donates electron pair | d Accepts proton |
| xiii | The indicator used in Fazan's method is | |
| | a Potassium chromate | b Ferric alum |
| | c Fluorescein (adsorption indicator) | d Starch |
| xiv | Hydrogen electrode iselectrode | |
| | a Reference | b Indicator |
| | c Both | d None |
| xv | The equivalent weight of base is equal to | |
| | a Molar mass/acidity | b Molar mass x normality |
| | c Moles x valency | d None |
| xvi | Accuracy means | |
| | a Reproducibility | b Closeness to true value |
| | c Number of observations | d Percentage error |
| xvii | Limit tests are used to detect | |
| | a Active ingredients | b Impurities |
| | c Water | d Preservatives |
| xviii | Ilkovic equation is related to | |
| | a Conductometry | b Polarography |
| | c Gravimetry | d Acid-base titration |
| xix | Oxidation involves | |
| | a Gain of electrons | b Loss of electrons |
| | c Gain of hydrogen | d Loss of oxygen |
| xx | Diazotization titration is mainly applied for | |
| | a Amines | b Alcohols |
| | c Ketones | d Esters |

Part B: Long Answer Questions

- 2) Discuss the theory, types, and applications of redox titrations in pharmaceutical analysis.
- 3) Explain in detail the principles, neutralization curves and applications of acid-base titrations.
- 4) Describe in detail the various steps involved in gravimetric analysis.

Part C: Short Answer Questions

- 5) Explain the principle, procedure, and applications of Volhard's method.

- 6) Discuss standardization of 0.1 N sodium hydroxide solution.
- 7) Discuss the types and applications of precipitation titration.
- 8) Describe the working and application of a calomel electrode.
- 9) Write the assay of Ephedrine hydrochloride.
- 10) Describe the Quinonoid and Oswald's theories of acid-base indicators.
- 11) Explain the sources of error and methods to minimize them.
- 12) Give detailed account of polarography with example.
- 13) Explain in brief about different types of conductometric titration.

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Roll No.....

A-1503

B. Pharmacy I Semester Examinations (August 2026)
Pharmaceutics-I (BP103T)

Time- 3 hrs
Max.Marks-75

The paper is divided into 3 parts: A, B, and C. All parts are compulsory.

1. Part A contains 10 Objective Type Questions, all are compulsory. Each question carries 2marks.
2. Part B contains 3 Long Answer Questions, out of which you must attempt any 2. Each question carries 10 marks.
3. Part C contains 9 Short Answer Questions, out of which you must attempt any 7. Each question carries 5 marks.

PART A: Objective Type Questions

1.
 - a) Define posology and mention any two factors affecting Posology.
 - b) Write the formula for calculating pediatric dose using Young's Formula.
 - c) Define hygroscopic powders with one suitable example.
 - d) Mention any two ideal characteristics of a pharmaceutical suspension.
 - e) Name any two methods used to improve the physical stability of emulsions.
 - f) State any two factors affecting the absorption of drugs through the skin.
 - g) Why are ointments considered suitable for dry and scaly skin conditions.
 - h) Mention any two disadvantages of liquid dosage forms.
 - i) Why should volatile substances be stored in well-closed containers.
 - j) State any two professional responsibilities of a registered pharmacist.

Part B: Long Answer Questions

2. Define prescription. Explain the essential parts of a prescription and describe the role of the pharmacist in dispensing prescriptions.
3. Define emulsions. Discuss their methods of preparation, identification tests, and stability problems in detail.
4. Define pharmaceutical incompatibility. Explain physical and chemical incompatibilities with suitable examples.

Part C: Short Answer Questions

5. Discuss the historical development and current scope of the pharmacy profession in India.
6. Explain the different types of ointment bases with their advantages and applications.
7. Calculate the pediatric dose using Dilling's Formula if the adult dose is 500 mg and the age of the child is 8 years.
8. Define isotonic solutions. Discuss the methods used for adjusting tonicity.
9. Explain the classification of suspensions with suitable examples.

10. Differentiate between creams and ointments.
11. Explain the factors affecting percutaneous absorption of drugs.
12. Describe the process of geometric dilution and mention its pharmaceutical importance.
13. Calculate the pediatric dose using Clark's Formula for a child weighing 25 kg when the adult dose is 600 mg.

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Roll No.....

A-1504

B. Pharmacy I Semester Examinations (August 2026)
Pharmaceutical Inorganic Chemistry I (BP104T)

Time- 3 hrs
Max. Marks-75

The paper is divided into 3 parts: A, B, and C. All parts are compulsory.

1. Part A contains 10 Objective Type Questions, all are compulsory. Each question carries 2 marks.
2. Part B contains 3 Long Answer Questions, out of which you must attempt any 2. Each question carries 10 marks.
3. Part C contains 9 Short Answer Questions, out of which you must attempt any 7. Each question carries 5 marks.

PART A: Objective Type Questions

1.
 - a) State the principle of the limit test for sulphate.
 - b) Mention any two sources of impurities in pharmaceutical substances.
 - c) What is an isotonic solution?
 - d) List any two ideal properties of an antacid.
 - e) Why citric acid is used in limit test of Iron?
 - f) Define Emetics with example.
 - g) Define Haematinics? Give one example.
 - h) Mention any two methods of adjusting isotonicity.
 - i) Define expectorants and give one example.
 - j) Define Astringents.

Part B: Long Answer Questions

2. What are antacids? Discuss the ideal properties, classification, and therapeutic uses of antacids.
3. Describe the physiological functions of major extracellular and intracellular electrolytes and their role in replacement therapy.
4. Define radioactivity. Discuss the properties of α , β , and γ radiations, half-life, and measurement of radioactivity.

Part C: Short Answer Questions

5. Write a note on dentifrices and desensitizing agents.
6. Describe the principle and procedure of the limit test for chloride.
7. Write a note on expectorants with suitable examples.
8. Explain the mechanism of action, assay and uses of hydrogen peroxide.
9. Describe the assay of sodium thiosulphate.
10. Discuss the storage conditions and precautions for radioactive substances.
11. Define buffers and explain their importance in pharmaceutical systems.
12. Write a short note on Sodium Iodide I^{131} and its therapeutic applications.
13. Write a short note on Haematinics. Describe the assay of Ferrous sulphate.

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Roll No.....

A-1505

B. Pharmacy I Semester Examinations (August 2026)
Communication Skills (BP105T)

Time- 1.5 hrs
Max. Marks-35

The paper is divided into 2 parts: A and B. All parts are compulsory.

1. Part A contains 2 Long Answer Questions, out of which you must attempt any 1. Each question carries 10 marks.
2. Part B contains 7 Short Answer Questions, out of which you must attempt any 5. Each question carries 5 marks.

Part A: Long Answer Questions

1. Discuss basic listening skills and explain the importance of active listening in effective communication.
2. Explain effective written communication and describe the principles of writing effective messages.

Part B: Short Answer Questions

3. Describe the communication process with a neat diagram.
4. Explain any five barriers to communication with suitable examples.
5. Explain the elements of communication in detail.
6. Explain the Communication Styles Matrix with examples.
7. Explain the purpose of an interview and its importance.
8. Describe the steps involved in planning and delivering a presentation.
9. Explain the do's and don'ts of group discussion.

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Roll No.....

A-1506
B. Pharmacy I Semester Examinations (August 2026)
Remedial Biology (BP106 RBT)

Time- 1.5 hrs
Max. Marks-35

The paper is divided into 2 parts: A and B. All parts are compulsory.

1. Part A contains 2 Long Answer Questions, out of which you must attempt any 1. Each question carries 10 marks.
2. Part B contains 7 Short Answer Questions, out of which you must attempt any 5. Each question carries 5 marks.

Part A: Long Answer Questions

- | | |
|--|----|
| 1. Describe the morphology of flowering plants in detail. | 10 |
| 2. Define and classify Nervous system. Write in detail about the generation and conduction of nerve impulse. | 10 |

Part B: Short Answer Questions

- | | |
|--|---|
| 3. Write a note on the mechanism of urine formation. | 5 |
| 4. Describe the composition & functions of Blood. | 5 |
| 5. Explain Renin-angiotensin system. | 5 |
| 6. What are the five kingdoms of life? Describe any two in detail. | 5 |
| 7. Define the terms- Cardiac cycle and Nitrogen Cycle. | 5 |
| 8. What is the mechanism of breathing and its regulation? | 5 |
| 9. Write a note on glycolysis. | 5 |

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Roll No.....

A-1507

B. Pharmacy I Semester Examinations (February 2026)
Remedial Mathematics (BP106RMT)

Time- 1.5 hrs

Max. Marks-35

The paper is divided into 2 parts: A and B. All parts are compulsory.

1. Part A contains 2 Long Answer Questions, out of which you must attempt any 1. Each question carries 10 marks.
2. Part B contains 7 Short Answer Questions, out of which you must attempt any 5. Each question carries 5 marks.

Part A: Long Answer Questions

1. Solve by Cramer's rule $x+y+z=6$, $2x+3y+z=11$, $x-y+2z=5$
2. Integrate

$$\int \frac{5x+3}{(x+1)(x+2)} dx$$

using partial fraction.

Part B: Short Answer Questions

3. Find the equation of the line passing through (2,3) with slope 4.
4. Find the Laplace transform of $5e^{3t} - 2\sin t + 8t^4 + 11$.
5. Prove that:

$$\log \frac{81}{70} - \log \frac{27}{14} + \log \frac{10}{9} = 0$$

6. Evaluate:

$$\lim_{x \rightarrow 2} \frac{x^2 - 4}{x - 2}$$

$$7. \text{ Evaluate } \begin{vmatrix} 2 & 4 & 6 \\ 4 & -5 & 3 \\ 1 & 2 & 3 \end{vmatrix}$$

8. Using distance formula to show that the points Check whether (5,-2), (6,4) and (7,-2) are the vertices of an isosceles triangles.
9. If $y = x^2 \sin x$, find $\frac{dy}{dx}$

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Roll No.....

B-1501

B. Pharmacy II Semester Examinations (Aug 2026)
Human Anatomy & Physiology II (BP201T)

Time- 3 hrs.
Max. Marks-75

The paper is divided into 3 parts: A, B, and C. All parts are compulsory.

1. Part A contains 10 Objective Type Questions, all are compulsory. Each question carries 2 marks.
2. Part B contains 3 Long Answer Questions, out of which you must attempt any 2. Each question carries 10 marks.
3. Part C contains 9 Short Answer Questions, out of which you must attempt any 7. Each question carries 5 marks.

PART A: Objective Type Questions

1.
 - a) Define spermatogenesis and oogenesis.
 - b) Define tidal volume and give its normal value.
 - c) Give two functions of ATP.
 - d) Name any four neurotransmitters.
 - e) Give two functions of gastric acid.
 - f) Name the different processes/ steps involved in the urine formation.
 - g) Give any two functions of thymus gland.
 - h) Define synapse and action potential.
 - i) Name the different parts of human large intestine.
 - j) Define respiration.

Part B: Long Answer Questions

2. Explain the anatomy of human kidneys with the help of well labeled diagram.
3. Describe the physiology of menstruation in detail with the help of suitable diagram(s).
4. Explain the structure, endocrine and exocrine functions of human pancreas.

Part C: Short Answer Questions

5. Write a short note on reflex action.
6. Write the functions of human liver in detail.
7. Describe the structure and functions of cerebrum.
8. Describe the role of renin-angiotensin-aldosterone system.
9. Explain the anatomy of spinal cord.
10. Describe mechanism of respiration.
11. Write a short note on the hormones of adrenal gland.
12. Describe the structure of DNA.
13. Write a short note on the hormones of pituitary gland.

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Roll No.....

B-1502

B. Pharmacy II Semester Examinations (August 2026)
Pharmaceutical Organic Chemistry I (BP202T)

Time- 3 hrs
Max. Marks-75

The paper is divided into 3 parts: A, B, and C. All parts are compulsory.

1. Part A contains 10 Objective Type Questions, all are compulsory. Each question carries 2 marks.
2. Part B contains 3 Long Answer Questions, out of which you must attempt any 2. Each question carries 10 marks.
3. Part C contains 9 Short Answer Questions, out of which you must attempt any 7. Each question carries 5 marks.

Part A: Objective Type Questions

1.
 - a) Define structural isomerism and give one example of chain isomerism in alkanes.
 - b) What is sp^2 hybridization? Name the type of hybridization present in the carbon atoms of alkenes.
 - c) State Markownikoff's rule of addition with a suitable example.
 - d) Give the IUPAC name and one medicinal use of chloroform.
 - e) Write any two qualitative tests used for the identification of alcohols.
 - f) Define the Cannizzaro reaction with a suitable example.
 - g) Write the structure and one therapeutic use of vanillin.
 - h) Arrange the following in increasing order of acidity: formic acid, acetic acid, chloroacetic acid.
 - i) Give the structure and one pharmaceutical use of ethylenediamine.
 - j) Write the IUPAC name and one pharmacological use of amphetamine.

Part B: Long Answer Questions

2. Explain the mechanism, kinetics and orientation of $E1$ and $E2$ elimination reactions of alkyl halides. Discuss the factors affecting $E1$ versus $E2$ reactions with suitable examples.
3. Discuss the mechanism, kinetics, stereochemistry and rearrangement of carbocations involved in $SN1$ and $SN2$ reactions.
4. Explain the mechanism of aldol condensation and Cannizzaro reaction. Differentiate between crossed aldol condensation and crossed Cannizzaro reaction with suitable examples.

Part C: Short Answer Questions

5. Explain the common and IUPAC systems of nomenclature of organic compounds with suitable examples.
6. Write a note on the stability of conjugated dienes and explain the Diels-Alder reaction.
7. Explain the electrophilic and free radical addition reactions of alkenes with Markownikoff's and anti-Markownikoff's orientation.
8. Write the structure and uses of cetostearyl alcohol, benzyl alcohol and glycerol.
9. Explain the Perkin condensation and Benzoin condensation reactions with mechanism.
10. Write the qualitative tests used for the identification of aldehydes and ketones.
11. Discuss the factors affecting the acidity of carboxylic acids with suitable examples.
12. Write the structure and uses of salicylic acid, acetylsalicylic acid and methyl salicylate.
13. Explain the basicity of aliphatic amines and the factors affecting basicity.

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No. of Pages: 01

Roll No.....

B-1503

B. Pharmacy II Semester Examinations (August 2026)
Biochemistry (BP203T)

Time- 3 hrs

Max. Marks-75

The paper is divided into 3 parts: A, B, and C. All parts are compulsory.

1. Part A contains 10 Objective Type Questions, all are compulsory. Each question carries 2 marks.
2. Part B contains 3 Long Answer Questions, out of which you must attempt any 2. Each question carries 10 marks.
3. Part C contains 9 Short Answer Questions, out of which you must attempt any 7. Each question carries 5 marks.

PART A: Objective Type Questions

1.
 - a) Define gluconeogenesis and state its significance.
 - b) Define oxidative phosphorylation and explain its role in cellular energy production.
 - c) Define essential amino acids and list any two examples.
 - d) Identify the three ketone bodies and indicate their sites of production and utilization.
 - e) Define transamination and illustrate it with one example.
 - f) Define jaundice and classify its major types.
 - g) Define energy-rich compounds and classify them based on their biochemical characteristics.
 - h) Define the Michaelis constant (K_m) and interpret its significance in enzyme kinetics.
 - i) Define coenzymes and list any two examples.
 - j) Differentiate between DNA and RNA based on their structural and functional characteristics.

Part B: Long Answer Questions

2. Discuss the Electron Transport Chain and explain the mechanism of oxidative phosphorylation, highlighting their role in ATP generation.
3. Discuss the β -oxidation pathway of fatty acids, including its cellular site, sequence of reactions, and energy yield.
4. Explain the Citric Acid Cycle with respect to its biochemical reactions, energetics, and metabolic significance.

Part C: Short Answer Questions

5. Explain glycolysis pathway along with its significance
6. Describe formation and utilization of ketone bodies.
7. Explain the hormonal regulation of blood glucose in detail.
8. Discuss the biological significance of ATP and cAMP.
9. Explain the conversion of cholesterol into Vitamin D.
10. Explain the urea cycle in detail, outlining its steps, the enzymes involved, and its physiological significance.
11. Explain the double helical structure of DNA.
12. Explain enzyme inhibition with suitable examples.
13. Write a short note on therapeutic and diagnostic applications of enzymes and isoenzymes.

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Roll No.....

B-1504
B. Pharmacy II Semester Examinations (August 2026)
Pathophysiology (BP204T)

Time- 3 hrs
Max. Marks-75

The paper is divided into 3 parts: A, B, and C. All parts are compulsory.

1. Part A contains 20 Multiple Choice Questions (MCQs), all are compulsory. Each question carries 1 mark.
2. Part B contains 3 Long Answer Questions, out of which you must attempt any 2. Each question carries 10 marks.
3. Part C contains 9 Short Answer Questions, out of which you must attempt any 7. Each question carries 5 marks.

PART A: Multiple Choice Questions

1.
 - i Which of the following maintains a stable internal environment in the body?

a Necrosis	b Homeostasis
c Metaplasia	d Apoptosis
 - ii Excess calcium deposition in damaged tissues is called:

a Necrosis	b Fibrosis
c Calcification	d Edema
 - iii Which mediator is mainly responsible for vasodilation during inflammation?

a Histamine	b Insulin
c Dopamine	d Thyroxine
 - iv A major risk factor for hypertension is:

a Vitamin C deficiency	b Low blood glucose
c Hyperthyroidism	d High salt intake
 - v Narrowing of coronary arteries commonly results in:

a Asthma	b Angina pectoris
c Hepatitis	d Epilepsy
 - vi The principal organ affected in chronic renal failure is:

a Liver	b Kidney
c Lung	d Pancreas
 - vii Iron deficiency primarily leads to:

a Leukemia	b Anemia
c Hemophilia	d Thrombosis
 - viii Hemophilia mainly affects:

a White blood cells	b Blood clotting
c Blood pressure	d Blood sugar

- ix Diabetes mellitus primarily results from impaired:**
- | | |
|-----------------------|-------------------------------|
| a Glucagon secretion | b Insulin secretion or action |
| c Thyroxine synthesis | d Growth hormone production |
- x Parkinson's disease mainly involves degeneration of neurons producing:**
- | | |
|-----------------|-------------|
| a Serotonin | b Dopamine |
| c Acetylcholine | d Histamine |
- xi The most common cause of peptic ulcer disease is:**
- | | |
|--------------------|----------------------|
| a Viral infection | b Acid-pepsin injury |
| c Fungal infection | d Iron deficiency |
- xii Which hepatitis virus is commonly transmitted through blood transfusion?**
- | | |
|---------------|---------------|
| a Hepatitis A | b Hepatitis B |
| c Hepatitis E | d Hepatitis F |
- xiii Rheumatoid arthritis mainly affects:**
- | | |
|---------|----------|
| a Skin | b Joints |
| c Lungs | d Kidney |
- xiv Increased serum uric acid is associated with:**
- | | |
|----------------|------------------|
| a Osteoporosis | b Osteoarthritis |
| c Rickets | d Gout |
- xv Uncontrolled cell proliferation is a characteristic feature of:**
- | | |
|------------|----------------|
| a Diabetes | b Cancer |
| c Asthma | d Hypertension |
- xvi Which disease is caused by *Mycobacterium tuberculosis*?**
- | | |
|-----------|----------------|
| a Typhoid | b Tuberculosis |
| c Leprosy | d Meningitis |
- xvii AIDS is caused by:**
- | | |
|-------|-------|
| a HBV | b HVC |
| c HPV | d HIV |
- xviii Gonorrhea primarily affects the:**
- | | |
|---------------------|-------------------------|
| a Respiratory tract | b Genitourinary tract |
| c Nervous system | d Cardiovascular system |
- xix The major function of inflammation is to:**
- | | |
|---|---------------------------|
| a Eliminate harmful stimuli and initiate repair | b Reduce oxygen transport |
| c Promote tumor formation | d Increase blood glucose |
- xx Which one of the following is a disorder of thyroid function?**
- | | |
|-------------------|---------------------|
| a Hemophilia | b Asthma |
| c Hyperthyroidism | d Diabetes mellitus |

Part B: Long Answer Questions

- 2) Describe the causes and types of cell injury. Add a note on the different adaptive changes that occur in cells with suitable examples.
- 3) Differentiate between iron deficiency anemia, megaloblastic anemia, and sickle cell anemia

- based on their causes, clinical features, and complications.
- 4) Discuss ischemic heart disease with emphasis on its causes, disease progression, clinical manifestations, and possible complications.

Part C: Short Answer Questions

- 5) Differentiate between hyperplasia and metaplasia.
- 6) List the common causes responsible for cellular injury.
- 7) Identify the characteristic features of congestive heart failure.
- 8) Highlight the major differences between asthma and COPD.
- 9) List the complications associated with chronic kidney disease.
- 10) Compare osteoporosis and rheumatoid arthritis with respect to their pathological changes.
- 11) How are hepatitis viruses commonly transmitted?
- 12) Give examples of sexually transmitted diseases included in the syllabus.
- 13) What measures can be taken to prevent urinary tract infections?

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Roll No.....

B-1505

B. Pharmacy II Semester Examinations (August 2026)
Computer Applications in Pharmacy (BP205T)

Time- 2 hrs
Max. Marks-50

The paper is divided into 2 parts: A and B. All parts are compulsory.

1. Part A contains 3 Long Answer Questions, out of which you must attempt any 2. Each question carries 10 marks.
2. Part B contains 8 Short Answer Questions, out of which you must attempt any 6. Each question carries 5 marks.

Part A: Long Answer Questions

1. Explain the number systems used in computers. Describe binary, decimal, octal and hexadecimal number systems.
2. Describe the concept of information systems and software development. Explain information gathering, feasibility analysis, data flow diagrams and process life cycle.
3. Discuss the applications of computers in pharmacy practice, including drug information storage, hospital pharmacy, electronic prescribing systems and automated drug dispensing.

Part B: Short Answer Questions

4. Convert the decimal number 25 into binary and hexadecimal.
5. Explain HTML and CSS used in web technologies.
6. Define database and mention its importance in pharmacy.
7. Write the applications of MySQL and MS Access in pharmacy drug databases.
8. What are electronic prescribing and discharge systems (EP systems)?
9. Write a note on diagnostic and lab-diagnostic systems.
10. Write a note on patient monitoring systems.
11. What is Laboratory Information Management System (LIMS)? State its importance.

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Roll No.....

B-1506

B. Pharmacy II Semester Examinations (Aug 2026)
Environmental Sciences (BP 206T)

Time-2hrs
Max.Marks-50

The paper is divided into 2 parts: A and B. All parts are compulsory.

1. Part A contains 3 Long Answer Questions, out of which you must attempt any 2. Each question carries 10 marks.
2. Part B contains 8 Short Answer Questions, out of which you must attempt any 6. Each question carries 5 marks.

Part A: Long Answer Questions

1. Explain deforestation and its impacts on environment. How one can help in reducing deforestation?
2. What is land degradation? Write various ways by which land degradation occurs in nature.
3. Explain causes, effects and control measures of air pollution.

Part B: Short Answer Questions

4. Explain structure of ecosystem.
5. Write various sources of water pollution.
6. Define food chain and food web with example.
7. Explain main features of Desert ecosystem.
8. How soil pollution affects our environment?
9. What are natural resources? Write Difference between renewable and non-renewable resources.
10. What are mineral resources? How environment get damaged by mineral extraction?
11. Write role of an individual in conservation of natural resources.

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Roll No.....

B. Pharmacy III Semester Examinations (August 2026)
Pharmaceutical Organic Chemistry II (BP301T)

The paper is divided into 3 parts: A, B, and C. All parts are compulsory.

1. Part A contains 20 Multiple Choice Questions (MCQs), all are compulsory. Each question carries 1 mark.
2. Part B contains 3 Long Answer Questions, out of which you must attempt any 2. Each question carries 10 marks.
3. Part C contains 9 Short Answer Questions, out of which you must attempt any 7. Each question carries 5 marks.

1.

a	C_6H_{12}	b	C_6H_{24}
c	C_6H_6	d	C_8H_{14}

a $2n \pi$ electrons b $4n \pi$ electrons
c $(4n + 2) \pi$ electrons d 6σ electrons

a -NO₂
c -SO₃H
b -OH
d -CHO

a $\text{HNO}_3 + \text{H}_2\text{SO}_4$
c $\text{HCl} + \text{HNO}_3$

a -CH₃
c -OH
b -NO₂
d -NH₂

a	Resorcinol	b	Catechol
c	Hydroquinone	d	Cresol

a	Benedict's reagent	b	Tollens' reagent
c	Ferric chloride solution	d	Fehling's solution

a	Saponification	b	Hydrolysis
c	Hydrogenation	d	Esterification

a Acid value

b Iodine value

- 3) What are substituents in monosubstituted benzene compounds? Classify them based on their electronic effects and explain their influence on the reactivity and orientation of electrophilic aromatic substitution reactions with suitable examples.
- 4) What are fats and oils? Classify fats and oils and explain the important chemical reactions of hydrogenation, hydrolysis, saponification, and rancidity with suitable chemical equations

Part C: Short Answer Questions

- 5) Discuss the significance of iodine value and saponification value in the evaluation of fats and oils.
- 6) Give the synthetic evidences that led to the derivation of the structure of benzene.
- 7) Discuss the mechanism of nitration of benzene and mention the role of Lewis acid catalysts.
- 8) Explain the basicity of aromatic amines and discuss the effect of substituents on their basicity with suitable examples.
- 9) Explain the preparation of aryldiazonium salts and discuss any four of their synthetic applications with suitable chemical equations.
- 10) Describe the Sachse–Mohr theory of strainless rings and explain its significance in the stability of cycloalkanes.
- 11) Write the ring-opening reactions and methods of preparation of cyclopropane.
- 12) Explain the orbital structure and resonance of benzene with suitable diagrams.
- 13) Explain the concept of angle strain in cycloalkanes. Discuss Baeyer's strain theory in relation to the stability of cycloalkanes.

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No. of Pages: 01
Roll No.....

C-1502
B. Pharmacy III Semester Examinations (Aug 2026)
Physical Pharmaceutics I (BP302T)

Time- 3 hrs
Max. Marks-75

The paper is divided into 3 parts: A, B, and C. All parts are compulsory.

1. Part A contains 10 Objective Type Questions, all are compulsory. Each question carries 2 marks.
2. Part B contains 3 Long Answer Questions, out of which you must attempt any 2. Each question carries 10 marks.
3. Part C contains 9 Short Answer Questions, out of which you must attempt any 7. Each question carries 5 marks.

PART A: Objective Type Questions

1. Attempt the following

- a) Define isotonic solution and how can it be prepared?
- b) Define ideal solubility along with factors responsible for its deviation.
- c) Define polymorphism with examples.
- d) How can solubility be expressed?
- e) Define protein binding.
- f) Define solvation.
- g) State the distribution law and its application.
- h) What is optical rotation?
- i) What is solubilization?
- j) What is Sorensen's pH scale?

Part B: Long Answer Questions

2. Explain the factors affecting the solubility of drugs with suitable examples. Discuss methods to enhance drug solubility.
3. Explain binary solutions. Discuss ideal and real solutions with Raoult's law and deviations. Describe surface and interfacial tension.
4. Explain methods of measurement of surface and interfacial tension.

Part C: Short Answer Questions

5. Differentiate between ideal and real solutions.
6. Explain partially miscible liquids with phase diagrams and applications.
7. Write a short note on liquid crystals.
8. Explain the determination and applications of refractive index.
9. Discuss adsorption at solid interfaces.
10. Explain the HLB scale with pharmaceutical applications.
11. Describe the buffer equation and its applications.
12. Explain electrometric determination of pH.
13. Write a note on diffusion principles in biological systems.

The paper is divided into 3 parts: A, B, and C. All parts are compulsory.

1. Part A contains 10 Objective Type Questions, all are compulsory. Each question carries 2 marks.
2. Part B contains 3 Long Answer Questions, out of which you must attempt any 2. Each question carries 10 marks.
3. Part C contains 9 Short Answer Questions, out of which you must attempt any 7. Each question carries 5 marks.

PART A: Objective Type Questions

1.
 - a) Define the term
 - i) Z-Value
 - ii) Zone of Inhibition
 - b) Write the significance of positive control in sterility testing.
 - c) List the different types of spoilage in pharmaceuticals.
 - d) Differentiate between disinfection and antisepsis.
 - e) What do you mean by class100 clean room?
 - f) "Some moisture is necessary, but little is better than a lot." Justify the statement with respect to gaseous sterilisation.
 - g) What do you mean by CFU?
 - h) State the difference between Flagella and Fimbriae.
 - i) Name the chemicals used in gram staining and list their functions.
 - j) What are Cell lines?

Part B: Long Answer Questions

2. What is sterility testing? How is sterility testing conducted as per IP?
3. How will you carry out the microbiological assay of antibiotics?
4. Discuss the methods of sterilization along with their merits, demerits and applications

Part C: Short Answer Questions

5. Discuss the requirements for the cultivation of Fungi.
6. Describe the principle and working of the Scanning Electron Microscope.
7. What is Cell Culture? Give a general procedure for the growth of cell culture.
8. Classify bacteria on the basis of their nutritional requirements.
9. Describe the replication of Viruses.
10. What are the methods used for the evaluation of microbial stability in formulations?
11. Outline the process of assessment of new antibiotics.
12. How will you determine the viable bacterial count of a given sample?
13. Write a note on the bacterial growth curve.

No. of Pages: 02

Roll No.....

C-1504

B. Pharmacy III Semester Examinations (August 2026)
Pharmaceutical Engineering (BP304T)

Time- 3 hrs
Max. Marks-75

The paper is divided into 3 parts: A, B, and C. All parts are compulsory.

1. Part A contains 10 Objective Type Questions, all are compulsory. Each question carries 2 marks.
2. Part B contains 3 Long Answer Questions, out of which you must attempt any 2. Each question carries 10 marks.
3. Part C contains 9 Short Answer Questions, out of which you must attempt any 7. Each question carries 5 marks.

PART A: Objective Type Questions

1.
 - a) Reynolds number is used to determine:
 - i) Type of flow
 - ii) Viscosity of fluid
 - iii) Density of fluid
 - iv) Pressure drop
 - b) Size reduction increases the rate of dissolution mainly by increasing:
 - i) Density
 - ii) Surface area
 - iii) Porosity
 - iv) Hardness
 - c) Heat transfer by direct contact of molecules is called:
 - i) Convection
 - ii) Radiation
 - iii) Conduction
 - iv) Insulation
 - d) Molecular distillation is carried out under:
 - i) High pressure
 - ii) Atmospheric pressure
 - iii) High vacuum
 - iv) Superheated steam
 - e) Double cone blender works mainly on the principle of:
 - a) Shear
 - b) Diffusion
 - c) Convection
 - d) Impact
 - f) Filtration aid is added to:
 - i) Increase viscosity
 - ii) Reduce clarity
 - iii) Improve filtration rate
 - iv) Reduce temperature

- g) Corrosion due to chemical reaction without moisture is called:
 - i) Wet corrosion
 - ii) Dry corrosion
 - iii) Galvanic corrosion
 - iv) Pitting corrosion
- h) Stainless steel is preferred in pharmaceutical industry due to:
 - i) Low cost
 - ii) High corrosion resistance
 - iii) Easy availability
 - iv) High density
- i) Material handling system mainly aims to:
 - i) Increase labour
 - ii) Reduce cost and effort
 - iii) Increase processing time
 - iv) Increase wastage
- j) Erosion corrosion is caused due to:
 - i) High velocity fluid
 - ii) Static conditions
 - iii) Low temperature
 - iv) High pH

Part B: Long Answer Questions

2. a) Explain Reynolds number and its significance in pharmaceutical operations.
b) Describe the principle, construction and working of a Venturimeter.
3. a) Discuss how air water and soil pollutants accelerates corrosion of materials used in pharmaceutical industry.
b) Discuss about non perforated basket centrifuge.
4. a) Write pharmaceutical use of copper and aluminum.
b) Explain electrochemical theory of corrosion with diagram.

Part C: Short Answer Questions

5. Describe the construction, working, uses, merits and demerits of a cyclone separator.
6. Explain the principle and working of a multiple effect evaporator.
7. Write a short note on steam distillation with suitable examples.
8. Describe the principle, construction and working of a fluidized bed dryer.
9. Discuss in detail about inorganic and organic nonmetals.
10. Describe the principle and working of membrane filtration.
11. Explain in detail about relationship between corrosion and environmental pollution.
12. Write a note on materials of pharmaceutical plant construction.
13. Describe types of corrosion and methods of their prevention.

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No. of Pages: 01

Roll No.....

D 1501

B. Pharmacy IV Semester Examinations (August 2026)
Pharmaceutical Organic Chemistry III (BP401T)

Time- 3 hrs

Max. Marks-75

The paper is divided into 3 parts: A, B, and C. All parts are compulsory.

1. Part A contains 10 Objective Type Questions, all are compulsory. Each question carries 2 marks.
2. Part B contains 3 Long Answer Questions, out of which you must attempt any 2. Each question carries 10 marks.
3. Part C contains 9 Short Answer Questions, out of which you must attempt any 7. Each question carries 5 marks.

PART A: Objective Type Questions

1.
 - a) Give the structure and uses of imidazole and indole.
 - b) What are meso compounds?
 - c) What is D and L nomenclature?
 - d) What are the conditions of optical isomerism?
 - e) Differentiate chiral and achiral molecule.
 - f) Name the reducing agent used in Clemmensen reduction.
 - g) Define enantiomers with examples.
 - h) Write the synthetic importance of Birch reduction.
 - i) Define diastereoisomers with example.
 - j) What is the difference between cis and trans isomerism?

Part B: Long Answer Questions

2. Discuss with examples the rules of nomenclature and classification of heterocyclic compounds.
3. What is racemic modification? How can you resolve racemic mixture?
4. Discuss in detail the structure, synthesis, properties, and medicinal uses of pyridine.

Part C: Short Answer Questions

5. Give short note on Wolff-Kishner reduction.
6. Explain the Beckmann rearrangement reaction with examples.
7. Give RS system of nomenclature of optical isomers with sequence rules.
8. Give importance of LiAlH_4 in metal hydride reduction.
9. Write synthesis, reactions and uses of thiophene.
10. Chair form of cyclohexane is more stable than boat form. Explain in detail.
11. Discuss the structure and reactions of furan.
12. Give a short note on asymmetric synthesis.
13. Explain the following in detail: (i) Oppenauer-oxidation, (ii) Dakin reaction.

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Roll No.....

B. Pharmacy IV Semester Examinations (August 2026)
Medicinal Chemistry I (BP402T)

The paper is divided into 3 parts: A, B, and C. All parts are compulsory.

1. Part A contains 20 Multiple Choice Questions (MCQs), all are compulsory. Each question carries 1 mark.
2. Part B contains 3 Long Answer Questions, out of which you must attempt any 2. Each question carries 10 marks.
3. Part C contains 9 Short Answer Questions, out of which you must attempt any 7. Each question carries 5 marks.

1.

- i Which of the following reactions is not a Phase I metabolic transformation?
A ester hydrolysis
B reduction of ketones
C conjugation to alcohols
D oxidation of alkyl groups
- ii Which one is precursor for the synthesis of Propranolol?
A Beta Naphthol
B Alpha Naphthol
C Isopropyl amine
D None of the above
- iii Beta-2 receptors are predominantly present on
A blood vessels
B Heart
C eye muscles
D Airway smooth muscle
- iv m-Chloroacetyl phenol is used as a precursor for the synthesis of
A Phenylephrine
B Tolazoline
C Salbutamol
D Propranolol
- v Which of the following is a direct-acting cholinergic agonist?
A Atropine
B Bethanechol
C Neostigmine
D Pralidoxime
- vi Which of the following is a precursor of catecholamine.
A Phenylalanine
B Histidine
C Tyrosine
D None
- vii Which is true for anticonvulsant drugs?
A Alkyl substituents at C-5 does not contribute to sedation activity.
B A phenyl or other aromatic substituents at C-5 is essential for anticonvulsant activity.
C Alkyl substituents at C-5 is essential for anticonvulsants
D None of the above
- viii Which of the following is an indirect acting sympathomimetic drug?
A Dopamine
B Adrenaline
C Noradrenaline
D Amphetamine

- ix Which of the following ring is present in Phenytoin?**
 A Imidazole b Pyrazole
 C Oxazole d None
- x Antipsychotics block which type of receptor.**
 A Alpha receptor b D2 receptors
 C Muscarinic d Nicotinic
- xi Non-Steroidal Anti Inflammatory Drugs(NSAIDS) act by inhibiting:**
 A COX1 b COX2
 C Both d None
- xii Which drug is aryl propionic acid derivatives?**
 A Diclofenac b Ibuprofen
 C Mefenamic acid d Aspirin
- xiii Which isomer of amphetamine is more potent?**
 A Dextro b Levo
 C Both d None
- xiv Which of the following is an inhalation general anesthetic?**
 A Ketamine b Thiopental sodium
 C Halothane d Fentanyl
- xv A drug with a high partition coefficient is generally expected to have better _____.**
 A Water Solubility b Lipid membrane permeability
 C Protein synthesis d Renal excretion
- xvi A patient with organophosphate poisoning is treated with pralidoxime because it ____.**
 A locks muscarinic receptors b Reactivates acetylcholinesterase
 C Inhibits acetylcholine release d Stimulates nicotinic receptors
- xvii In the SAR of β -adrenergic blockers, the aryloxypropanolamine nucleus is considered _____.**
 A Pharmacophore b Metabolite
 C Prodrug d Impurity
- xviii Introduction of a tert-butyl group on the amino nitrogen of adrenergic agonists generally increases selectivity towards _____.**
 A α_1 receptors b β_2 receptors
 C Muscarinic receptors d α_2 receptors
- xix According to the SAR of morphine analogues, which structural modification generally decreases analgesic activity?**
 A Saturation of the 7,8-double bond b Removal of the phenolic hydroxyl group at C-3
 C Introduction of a hydroxyl group at C-14 d Hydrogenation of the 7,8-double bond
- xx Which structural feature is essential for the hypnotic activity of barbiturates?**
 A Pyridine ring b Imidazole ring
 C Barbituric acid nucleus substituted at the C-5 position d Steroid nucleus

Part B: Long Answer Questions

- 2) What is Biotransformation? Describe Phase I and Phase II reactions in detail.
- 3) Write down the effect of Physicochemical properties of Drug on its biological action.
- 4) What are Nonsteroidal Anti-Inflammatory Drugs (NSAIDs)? Explain their mechanism of action and classify NSAIDs based on their chemical structure.

Part C: Short Answer Questions

- 5) Write down the synthesis of any two drugs a) Phenytoin b) Carbachol c) Dicyclomine hydrochloride d) Mefenamic Acid
- 6) Write down the SAR of Barbiturates.
- 7) Classify Adrenergic receptors with their distribution.
- 8) Write down the synthesis of any two drugs. a) Carbamazepine b) Ibuprofen c) Methadone d) Propranolol
- 9) Define parasympathomimetic agents and classify them with suitable examples
- 10) Classify β -blockers and discuss their structure–activity relationship (SAR)
- 11) Write down the mechanisms of action of any two drugs. a) Neostigmine b) Ephedrine c) Atenolol d) Halothane
- 12) Explain the SAR and mechanism of action (MAO) of Anticonvulsants drugs.
- 13) What are Antipsychotics? Classify them with structure of each class.

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No. of Pages: 03

Roll No.....

D 1503

B. Pharmacy IV Semester Examinations (August 2026)
Physical Pharmaceutics II (BP403T)

Time- 3 hrs
Max.Marks-75

The paper is divided into 3 parts: A, B, and C. All parts are compulsory.

1. Part A contains 20 Multiple Choice Questions (MCQs), all are compulsory. Each question carries 1 mark.
2. Part B contains 3 Long Answer Questions, out of which you must attempt any 2. Each question carries 10 marks.
3. Part C contains 9 Short Answer Questions, out of which you must attempt any 7. Each question carries 5 marks.

PART A: Multiple Choice Questions

1.
 - i Which type of colloidal system has solid particles dispersed in a liquid?
 - a Aerosol
 - b Sol
 - c Foam
 - d Gel
 - ii Brownian movement is mainly responsible for
 - a Sedimentation
 - b Stability of colloids
 - c Coagulation
 - d Creaming
 - iii The SI unit of viscosity is
 - a Pascal-second
 - b Newton
 - c Joule
 - d Poise
 - iv Which flow system exhibits constant viscosity?
 - a Plastic
 - b Pseudoplastic
 - c Newtonian
 - d Dilatant
 - v Thixotropy is observed in
 - a Ideal solutions
 - b Suspensions
 - c Gases
 - d Tablets
 - vi Stoke's law is applicable for determination of
 - a Particle density
 - b Sedimentation velocity
 - c Surface tension
 - d Osmotic pressure
 - vii Which parameter indicates powder flowability?
 - a Density
 - b Angle of repose
 - c Melting point
 - d Solubility
 - viii Which instrument is commonly used for particle size analysis?
 - a Brookfield Viscometer
 - b Optical Microscope
 - c UV Spectrophotometer
 - d Dissolution Apparatus
 - ix Creaming occurs in
 - a Tablets
 - b Emulsions
 - c Capsules
 - d Suppositories

- x Which emulsion is generally preferred for oral administration?
 a W/O b O/W
 c Multiple emulsion d Microemulsion
- xi Which of the following is a flocculating agent?
 a Sodium chloride b Aluminium chloride
 c Sodium citrate d Potassium nitrate
- xii Zeta potential is associated with
 a Surface charge b Density
 c Solubility d pH only
- xiii Shelf life corresponds to
 a t_{50} b t_{75}
 c t_{90} d t_{99}
- xiv In a first-order reaction, the half-life is
 a Constant b Variable with concentration
 c Zero d Infinite
- xv Accelerated stability studies are generally performed at
 a High temperature and humidity b Low temperature
 c Room temperature only d Freezing conditions
- xvi Which rheological system exhibits yield value?
 a Newtonian b Plastic
 c Pseudoplastic d Dilatant
- xvii Which property improves suspension stability?
 a Large particle size b Controlled flocculation
 c High sedimentation d Crystal growth
- xviii Micromeritics deals with
 a Particle science b Tablet coating
 c Capsules d Sterilization
- xix Which order reaction has units of rate constant as time^{-1} ?
 a Zero order b First order
 c Second order d Third order
- xx ICH guidelines are mainly related to
 a Packaging b Stability studies
 c Manufacturing d Marketing

Part B: Long Answer Questions

Q.2 Discuss the classification, preparation, properties and pharmaceutical applications of colloidal dispersions.

Q.3 Explain various rheological systems with neat rheograms. Discuss the pharmaceutical significance of viscosity and thixotropy.

Q.4 Explain reaction kinetics. Discuss methods of determining shelf life and accelerated stability testing according to ICH guidelines.

Part C: Short Answer Questions

- Q.5** Discuss optical properties of colloidal dispersions.
- Q.6** Explain sedimentation volume and degree of flocculation.
- Q.7** Describe various methods of particle size determination.
- Q.8** Differentiate between flocculated and deflocculated suspensions.
- Q.9** Explain different types of flow behaviour with examples.
- Q.10** Write a short note on emulsifying agents.
- Q.11** Discuss accelerated stability testing.
- Q.12** With the help of neat diagram explain principle and working of coulter counter method to determine the particle size
- Q.13** Explain the pharmaceutical applications of micromeritics

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No. of Pages:03

Roll No.....

D 1504

B. Pharmacy IV Semester Examinations (August 2026)
Pharmacology I (BP404T)

Time- 3 hrs
Max. Marks-75

The paper is divided into 3 parts: A, B, and C. All parts are compulsory.

1. Part A contains 20 Multiple Choice Questions (MCQs), all are compulsory. Each question carries 1 mark.
2. Part B contains 3 Long Answer Questions, out of which you must attempt any 2. Each question carries 10 marks.
3. Part C contains 9 Short Answer Questions, out of which you must attempt any 7. Each question carries 5 marks.

PART A: Multiple Choice Questions

1.
 - i The branch of pharmacology that deals with the movement of drugs within the body is:
 - a Pharmacodynamics
 - b Pharmacotherapeutics
 - c Pharmacokinetics
 - d Toxicology
 - ii Which organ is primarily responsible for drug metabolism?
 - a Kidney
 - b Liver
 - c Heart
 - d Lungs
 - iii A drug producing maximal response by occupying receptors is called:
 - a Antagonist
 - b Agonist
 - c Partial blocker
 - d Enzyme inhibitor
 - iv Which receptor is linked with G-proteins?
 - a Ligand-gated ion channel
 - b GPCR
 - c Nuclear receptor
 - d Enzyme inhibitor
 - v The study of unwanted effects of medicines is known as:
 - a Pharmacoeconomics
 - b Pharmacovigilance
 - c Pharmacognosy
 - d Toxicodynamics
 - vi Drug interactions affecting absorption, metabolism or excretion are called:
 - a Pharmacodynamic interactions
 - b Pharmacokinetic interactions
 - c Chemical interactions
 - d Receptor interactions
 - vii Clinical trials conducted after marketing approval belong to:
 - a Phase I
 - b Phase II
 - c Phase III
 - d Phase IV
 - viii The principal neurotransmitter of parasympathetic nerves is:
 - a Dopamine
 - b Acetylcholine
 - c Serotonin
 - d Histamine

- | | | |
|--------------|---|-------------------------------|
| ix | Which drug produces skeletal muscle relaxation by blocking neuromuscular transmission? | |
| | a Atropine | b Pancuronium |
| | c Neostigmine | d Diazepam |
| x | Local anaesthetics primarily block: | |
| | a Potassium channels | b Sodium channels |
| | c Calcium channels | d Chloride channels |
| xi | GABA mainly acts as: | |
| | a Excitatory neurotransmitter | b Inhibitory neurotransmitter |
| | c Hormone | d Enzyme |
| xii | Diazepam belongs to: | |
| | a Opioids | b Benzodiazepines |
| | c SSRIs | d Antipsychotics |
| xiii | Phenytoin is mainly prescribed for: | |
| | a Depression | b Epilepsy |
| | c Schizophrenia | d Parkinsonism |
| xiv | Disulfiram is used in the management of: | |
| | a Anxiety | b Alcohol dependence |
| | c Insomnia | d Epilepsy |
| xv | Donepezil is prescribed for: | |
| | a Epilepsy | b Alzheimer's disease |
| | c Migraine | d Anxiety |
| xvi | Antipsychotic drugs are mainly used in: | |
| | a Diabetes | b Schizophrenia |
| | c Hypertension | d Asthma |
| xvii | Morphine exerts its analgesic effect by acting on: | |
| | a Muscarinic receptors | b Adrenergic receptors |
| | c Opioid receptors | d Histamine receptors |
| xviii | Naloxone is primarily used in: | |
| | a Alcohol poisoning | b Opioid overdose |
| | c Anxiety | d Depression |
| xix | Which one of the following is classified as a CNS stimulant? | |
| | a Diazepam | b Haloperidol |
| | c Caffeine | d Morphine |
| xx | Repeated administration of a drug resulting in reduced response is termed: | |
| | a Allergy | b Tolerance |
| | c Idiosyncrasy | d Potentiation |

- 2) Describe the different receptor families involved in drug action. Explain how receptor regulation influences therapeutic efficacy.
- 3) Classify adrenergic drugs. Discuss the pharmacological actions, therapeutic applications and adverse effects of sympathomimetic agents.

- 4) Explain the factors that influence drug distribution and elimination. Discuss the significance of these processes in determining drug response.

Part C: Short Answer Questions

- 5) Write a brief note on the concept of essential drugs.
- 6) Outline the process involved in the discovery of a new drug.
- 7) Discuss the role of therapeutic index in ensuring safe drug therapy.
- 8) Write a short note on neurotransmission in the autonomic nervous system.
- 9) Describe the therapeutic uses of anticholinergic drugs.
- 10) List the classification of sedative and hypnotic drugs with suitable examples.
- 11) Differentiate between drug abuse and drug dependence.
- 12) Discuss the therapeutic uses of opioid antagonists.
- 13) Write a short note on hallucinogens.

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Roll No.....

B. Pharmacy IV Semester Examinations (August 2026)
Pharmacognosy and Phytochemistry I (BP405T)

The paper is divided into 3 parts: A, B, and C. All parts are compulsory.

1. Part A contains 20 Multiple Choice Questions (MCQs), all are compulsory. Each question carries 1 mark.
2. Part B contains 3 Long Answer Questions, out of which you must attempt any 2. Each question carries 10 marks.
3. Part C contains 9 Short Answer Questions, out of which you must attempt any 7. Each question carries 5 marks.

1.

- 1 | Page

- ix Molecular formula for isoprene unit is:**
- a $C_8 H_8$ b $C_8 H_5$
c $C_5 H_8$ d $C_3 H_6$
- x Which instrument provides information about functional groups present in a secondary metabolite?**
- a NMR spectroscopy b Mass spectroscopy
c Infrared spectroscopy d Microscopy
- xi What best describes a callus in plant tissue culture?**
- a A differentiated shoot system b A fungal contaminant
c An undifferentiated mass of proliferating cells d A mature seedling
- xii Shoot tip culture is an organ culture method especially useful for producing:**
- a Virus-free planting material b Large roots for extraction
c Bulk seed stocks d Protoplast-derived hybrids
- xiii "Moxibustion" practice is derived from which of the following system of medicine?**
- a Ayurvedic system of medicine b Homeopathic system of medicine
c Unani system of medicine d Chinese system of medicine
- xiv Agent that can disturb the development of the embryo or foetus and cause congenital malformation:**
- a Artemisinin b Arabic acid
c 8,9-tetrahydrocannabinol d Anthraquinone
- xv Which of the following is a biological method to control the pest?**
- a Crop improvement b Crop rotation
c Pathogen is destroyed by another living organisms d Ploughing the fields deeply
- xvi Oil is having antileprotic property:**
- a Castor oil b Chaulmoogra oil
c Linseed oil d Arachis oil
- xvii Resins containing benzoic acid or cinnamic acids are called as:**
- a Oleoresins b Glycoresins
c Balsams d Oleogum
- xviii Chemical test used for identification of carbohydrates:**
- a Ninhydrin b Molisch
c Baljet d Mayers
- xix Adulteration due to impairment in the quality of the drug is known as:**
- a Spoliage b Substitution
c Sophistication d Deterioration
- xx Example of bio fertilizer is:**
- a Rhizobium b Mycorrhiza
c Cyanobacteria d All of above

Part B: Long Answer Questions

- 2) What are different types of plant hormones? Explain them briefly with examples.
- 3) Critically evaluate the concept of edible vaccines with their potential benefits and limitations.
- 4) Discuss about different factors affecting cultivation of crude drugs with suitable examples.

Part C: Short Answer Questions

- 5) Develop a note on chemical classification of drugs.
- 6) Analyse Ayurvedic System of Medicine and its role in pharmacognosy.
- 7) Write biological source, chemical constituents, uses of acacia and castor oil.
- 8) Define glycoside. Discuss classification and uses of glycosides.
- 9) Analyze the applications of plant tissue culture in pharmacognosy with relevant examples.
- 10) Apply physical evaluation techniques in assessing drug quality.
- 11) Write short note on unorganized drug.
- 12) Define hybridization. Write the procedure of hybridization with respect to medicinal plants.
- 13) Write source, preparation and uses of gelatin.

- - -

