Code No:281AB

R22

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Pharmacy I Year I Semester Examinations, April/May -2025
HUMAN ANATOMY AND PHYSIOLOGY - I

Time : 3 hours **Max Marks: 75**

Note: The end semester examinations will be conducted for 75 marks consisting of two partsviz. i) **Part- A** for 25 marks, ii) **Part - B** for 50 marks.

- **Part-A** is compulsory question which consists of fifteen sub-questions. The first ten sub-questions are of Objective type/ Multiple Choice Questions, 2 from each unit and carry 1 mark each. The next five sub-questions are Short Answer Questions one from each unit and carry 3 marks each.
- **Part-B** consists of ten Long Answer Questions (numbered from 2 to 11) carrying 10 marks each. Each of these questions is from one unit and may contain sub-questions. For each question there will be an "either" "or" choice, which means that there will be two questions from each unit and the student should answer either of the two questions.

PART- A **(25 Marks)**

1.a) What is the basic unit of life? [1]
A) Nucleus B) Cell
C) Mitochondria D) Tissue

b) Intra-cellular fluid is rich in…….. [1]
A) K^+ B) Mg^{++}
C) Na^+ D) All

c) Bone marrow can store…… [1]
A) Calcium B) Magnesium
C) Iron D) All

d) Osteocalcin…… [1]
A) Produced from bone cell B) Regulate blood glucose level
C) increase insuline sensitivity D) All

e) Tactile receptors are a type of sensory receptor present on …… [1]
A) Brain B) Spinal cord
C) Integument D) eyes

f) Primary site for memory storage is…… [1]
A) Cerebrum B) Cerebellum
C) Hypothalamus D) Medulla oblongata

g) Key neurotransmitter of sympathetic nervous system is …… [1]
A) Acetylcholine B) Nor-adrenaline
C) Adrenaline D) both Nor-adrenaline and Adrenaline

h) Somatic nervous system will regulate the function of …… [1]
A) Cardiac muscle B) Smooth muscle
C) Skeletal muscle D) All

i) …… helps express milk from the mammary glands to the nipples. [1]
A) Prolactin B) Oxytocin
C) Growth hormone D) All

j) Calcitonin is secreted from the……gland. [1]
A) Thyroid B) Parathyroid
C) Pituitary D) Pineal

k) Explain the term *homeostasis* with a suitable example. [3]
l) Write the significance of skin in body temperature regulation. [3]
m) Draw a labeled diagram of neuron. Write the functions of its structural components. [3]
n) Write a note on the cranial nerves. [3]
o) Give the physiological impact of the growth hormone. [3]

PART-B (50 Marks)

2.a) Write the difference between the diffusion and active transport with suitable examples.
b) Explain various types of epithelial tissues citing their specific functions. [5+5]

OR

3. Classify the connective tissues. Write their distinguishing characteristic features in detail. [10]

4.a) Write a note on the anatomy and physiology of rib cage.
b) Write the salient features of the skeletal system. [5+5]

OR

5.a) Give the classification of the bones in detail.
b) Explain the physiology of joint movements. [5+5]

6. Write the structural features and functions of the spinal cord. Draw a labeled diagram of reflex arc. [10]

OR

7. Give the structural classification of the brain. Write the functional features of cortex, cerebellum, pons and medulla in detail. [10]

8. What is autonomic nervous system? How it helps the central nervous system to regulate significant body functions? [10]

OR

9. Explain the physiology of the eye and its disorder with the help of diagrams in detail. [10]

10.a) Write the structural and functional features of the parathyroid gland.
b) Explain the negative feedback inhibition of the glucocorticoids. [5+5]

OR

11.a) Write a note on hormonal regulation on the electrolyte homeostasis.
b) Give an account on the endocrine secretions of the adrenal medulla. [5+5]

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Pharmacy I Year I Semester Examinations, September - 2024
HUMAN ANATOMY AND PHYSIOLOGY - I

Time : 3 hours **Max Marks: 75**

Note: The end semester examinations will be conducted for 75 marks consisting of two parts viz. i) **Part- A** for 25 marks, ii) **Part - B** for 50 marks.

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PART- A **(25 Marks)**

1.a) Which type of tissue is responsible for transmitting electrical impulses? [1]
A) Connective tissue B) Muscular tissue
C) Epithelial tissue D) Nervous tissue

b) The primary function of the cell membrane is to: [1]
A) Produce energy B) Control what enters and leaves the cell
C) Store genetic information D) Synthesize proteins

c) The outermost layer of the skin is known as: [1]
A) Dermis B) Epidermis
C) Hypodermis D) Subcutaneous layer

d) How many bones are there in the adult human skeleton? [1]
A) 198 B) 206
C) 214 D) 220

e) The basic functional unit of the nervous system is the: [1]
A) Neuroglia B) Neuron
C) Synapse D) Axon

f) Which type of neuroglia is involved in the blood-brain barrier? [1]
A) Schwann cells B) Ependymal cells
C) Astrocytes D) Microglia

g) Which of the following correctly classifies the peripheral nervous system (PNS)? [1]
A) Sympathetic and Parasympathetic Nervous Systems
B) Central and Peripheral Nervous Systems
C) Autonomic and Somatic Nervous Systems
D) Motor and Sensory Nervous Systems

h) The parasympathetic nervous system originates primarily from which part of the central nervous system? [1]
A) Thoracic and lumbar regions B) Cranial and sacral regions
C) Cervical and lumbar regions D) Brainstem and spinal cord

i) Which of the following is an example of a steroid hormone? [1]

A) Insulin B) Cortisol

C) Adrenaline D) Thyroxine

j) Which part of the adrenal gland is responsible for secreting adrenaline (epinephrine)? [1]

A) Adrenal cortex B) Adrenal medulla

C) Zona glomerulosa D) Zona reticularis

k) Differentiate between synaptic and endocrine signaling. [3]

l) Explain the salient features of bones in the axial skeletal system. [3]

m) Describe the organization of the nervous system. [3]

n) What is the role of the cochlea in the ear? [3]

o) Outline the functions of the parathyroid glands. [3]

PART-B (50 Marks)

2.a) Explain the concept of homeostasis and how the body maintains it.

b) Outline the structure and function of nervous tissue. [5+5]

OR

3.a) Describe the structure and function of muscular tissue in the human body.

b) Write a note on synaptic signaling. [5+5]

4.a) Compare and contrast compact bone and spongy bone.

b) Explain the sliding filament theory of muscle contraction in detail. [5+5]

OR

5.a) Describe the various types of joints in the human body

b) Describe the main functions of the skeletal system. [5+5]

6.a) Explain the role of neurotransmitters at a synapse.

b) Discuss the structure and functions of the brain. [5+5]

OR

7.a) Explain the process of action potential generation and propagation in nerve fibers.

b) Explain the organization of the spinal cord. [5+5]

8.a) Outline the structure and function of the human eye.

b) Describe the structure and functions of the tongue. [5+5]

OR

9.a) Describe the structure and functions of the ear.

b) Discuss common disorders related to the ear. [5+5]

10.a) Outline the structure and functions of the thyroid gland.

b) Describe common disorders associated with adrenal gland. [5+5]

OR

11.a) Explain the role of the pineal gland in the body.

b) Outline the structure and functions of the pancreas. [5+5]

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Code No:281AB

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Pharmacy I Year I Semester Examinations, March - 2024

HUMAN ANATOMY AND PHYSIOLOGY - I

Time : 3 hours **Max Marks: 75**

Note: The end semester examinations will be conducted for 75 marks consisting of two partsviz. i) **Part- A** for 25 marks, ii) **Part - B** for 50 marks.

- **Part-A** is compulsory question which consists of fifteen sub-questions. The first ten sub-questions are of Objective type/ Multiple Choice Questions, 2 from each unit and carry1 mark each. The next five sub-questions are Short Answer Questions one from each unit and carry 3 marks each.
- **Part-B** consists of ten Long Answer Questions (numbered from 2 to 11) carrying 10 marks each. Each of these questions is from one unit and may contain sub-questions. For each question there will be an "either" "or" choice, which means that there will be two questions from each unit and the student should answer either of the two questions.

PART- A

(25 Marks)

1.a) Example for unicellular epithelial gland [1]
A) Salivary gland B) Adrenal gland C) Goblet cells D) Chief cells

b) Carbohydrate synthesis in cell is taking place in [1]
A) Mitochondria B) Nucleus C) Golgi apparatus D) Ribosome

c) Example for facial bone is [1]
A) Fibula B) Occipital C) Rib D) Mandible

d) Which is axial bone? [1]
A) Sternum B) Clavicle C) Patella D) Sacrum

e) Which is a part of brain stem? [1]
A) Pons B) Hippocampus C) Thalamus D) Cerebellum

f) Body temperature is regulated by [1]
A) Pons B) Cerebrum C) Hypothalamus D) Cerebellum

g) Which cells are responsible for light vision? [1]
A) Cone cells B) Rod cells C) Parietal cells D) Absorptive cells

h) Glaucoma is a disorder of [1]
A) Ear B) Smell C) Eye D)Taste

i) Which is posterior pituitary hormone? [1]
A) Growth hormone B) Androgen C) Vasopressin D) Thyroid hormone

j) Pancreatic beta cells secrete _____ [1]
A) Thyroxin B) Oxytocin C) Glucagon D) Insulin

k) Draw the structure of nervous tissue. [3]

l) What are the types of bones? [3]

m) Write the functions of cerebellum. [3]

n) Define glaucoma and conjunctivitis. [3]

o) Write the functions of thymus gland. [3]

PART-B

(50 Marks)

2. Classify epithelial tissues with examples and diagram. Discuss the each function. [10]

OR

3. Define cell division. Discuss the mitosis cell division with diagram. [10]

4. Explain the physiology of skeletal muscle contraction with diagram. [10]

OR

5. Draw the labeled diagram of skin. Elaborate the anatomy and functions of skin. [10]

6. Discuss in detail about gross anatomy and functions of spinal cord. [10]

OR

7. Write Structure of cerebrum. Write the functional area of cerebrum and its importance. [10]

8. Draw the labeled diagram of ear. Discuss the physiology of hearing. [10]

OR

9.a) Write the Physiology of olfaction. [5+5]

b) List out the cranial nerves and its function.

10. Explain in detail about structure and functions of adrenal gland. [10]

OR

11. Discuss the steps involved in biosynthesis of thyroid hormone with diagram. [10]

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Pharmacy I Year I Semester Examinations, April/May -2025
PHARMACEUTICAL ANALYSIS – I

Time : 3 hours **Max Marks: 75**

Note: The end semester examinations will be conducted for 75 marks consisting of two parts viz. i) **Part- A** for 25 marks, ii) **Part - B** for 50 marks.

- **Part-A** is compulsory question which consists of fifteen sub-questions. The first ten sub-questions are of Objective type/ Multiple Choice Questions, 2 from each unit and carry 1 mark each. The next five sub-questions are Short Answer Questions one from each unit and carry 3 marks each.
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PART- A

(25 Marks)

1.a) One of the following is a primary standard for sodium hydroxide. [1]
A) Sodium hydroxide B) Ceric ammonium sulphate
C) potassium hydrogen phthalate D) Hydrochloric acid

b) .....ml of 0.1N hydrochloric acid is required to completely neutralize 10 ml of 0.2 N sodium hydroxide [1]
A)20 B) 10
C) 100 D) 50

c) One of the following is an indicator in the titration of sodium hydroxide Vs hydrochloric acid [1]
A) ferroin B) Eosin
C) Phenolphthalein D) Iodine

d) Mercuric acetate is added in the assay of: [1]
A) Sodium hydroxide B) Ephedrine hydrochloride
C) Ferrous sulphate D) Iodine

e) One of the following is an organic precipitant [1]
A) EDTA B) BAL
C) Boric acid D) Oxime

f) pH of the titrating solution is adjusted to .....in the complexometric assay of calcium gluconate [1]
A) 10 B) 5
C) 12 D) 3

g) One of the following is a self-indicator [1]
A) Crystal violet B) Phenolphthalein
C) Potassium permanganate D) Gentian violet

h) Vitamin C is assayed by..... as per IP [1]
A) Iodimetry B) Iodometry
C) Permangometry D) Dichrometry

i) Glass electrode is not satisfactory in the pH of: [1]
A) 6-10 B) Above 10
C) at 10 D) Below 6

j) Cell constant in conductivity cell is measured using [1]

A) 0.02M KCl B) saturated KCl

C) 2 M KCl D) 0.2M KCl.

k) List the concentration expressions used in pharmaceutical analysis. [3]

l) Explain Lowry Bronsted theory for acids and bases. [3]

m) List the merits of organic precipitants used in gravimetry. [3]

n) Explain the preparation and mechanism of action of ferroin indicator. [3]

o) List the applications of conductometric determinations other than conductometric titrations. [3]

(50 Marks)

PART-B

2.a) Classify primary standards with examples.

b) List the sources of errors in the pharmaceutical analysis.

c) Explain the preparation of 500 ml of 0.1M sulphuric acid as per IP. [6+2+2]

OR

3.a) Explain the methods to overcome systematic errors in brief.

b) Define the term systematic error.

c) Explain the preparation of 500 ml of 0.N Oxalic acid. [7+1+2]

4. Explain the titration curve when 100 ml of 0.1N sodium hydroxide titrated with 0.1N hydrochloric acid showing calculation of pH at various volume intervals. Draw the titration curve. Mark the distinct regions. [10]

OR

5.a) Explain mechanism of action of phenolphthalein as an acid base indicator.

b) Classify the solvents used in nonaqueous titrations.

c) Name two drugs assayed by nonaqueous titration as per IP. [4+5+1]

6.a) Explain the principle of Volhard's method for the estimation of halides.

b) What modification is made to Volhard's method? [6+4]

OR

7.a) Explain the principle for the estimation of chlorides by using a method that uses adsorption indicator.

b) Explain the principle in the assay of barium by gravimetry.

c) Name two ideal properties of metal ion indicators. [5+3+2]

8.a) Explain the conditions for Iodometric determinations.

b) Explain the preparation and storage of starch mucilage as an indicator.

c) Write the storage conditions for Iodine volumetric solutions. [7+2+1]

OR

9.a) List the merits of ceric ammonium sulphate as titrant.

b) List the pharmaceutical applications of ceric sulphate titrations.

c) Explain the preparation of 250 ml of 0.05M ceric ammonium sulphate. [5+3+2]

10.a) Explain the construction and working of Glass electrode.

b) List the advantages of Glass electrode.

c) Name the chemicals used in rejuvenation of Glass electrode. [6+3+1]

OR

11.a) Explain the conductometric titration for the mixture of strong acid and weak acid Vs strong base.

b) List the precautions to be observed during conductometric titrations.

c) List two advantages of conductometric titrations over titrations involving indicators. [5+3+2]

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Pharmacy I Year I Semester Examinations, March - 2024

PHARMACEUTICAL ANALYSIS - I

Time : 3 hours **Max Marks: 75**

Note: The end semester examinations will be conducted for 75 marks consisting of two partsviz. i) **Part- A** for 25 marks, ii) **Part - B** for 50 marks.

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PART - A (25 Marks)

1.a) ------is used as primary standard for standardization of NaOH. [1]
A) Sodium carbonate B) Sodium bicarbonate
C)Sodium chloride C) Potassium dichromate

b) Errors arise due to the individual analyst is responsible for them. [1]
A) Method error B) Instrumental error
C) Personal error D) Random error

c) The colour change is due to ionisation of the acid base indicators [1]
A) Ostwald theory B) Chromophore theory
C) Quinonoid theory D) Resonance theory

d) ------used as titrant in non-aqueous titration. [1]
A) EDTA B) Perchloric acid
C)Sodium nitrite D) Silver nitrite

e) Which method is used in water analysis [1]
A) Fajan's method B) Mohr's method
C) Volhard's method D) None of these

f) AgCl has to be filtered off before titration using [1]
A) Modified Volhard's method B) Mohr's method
C) Fajan's method D) None of the above

g) Oxidation-Reduction titration is also known as [1]
A) complexometric titration B) Gravimetric titration
C) Redox titration D) Gasometric titration

h) In bromatometry uses_____ as oxidizing agents [1]
A) Potassium dichromate n bromine water B) Sodium bromate
B) Bromine water D) Potassium bromate

i) Conductometry used for the measurement of [1]
A) Conductivity B) Potential
C) Temperature D) Concentration

j) What is the full form of DME polarography? [1]
A) Dropping Mercury Electrode B) Dipping Mercury Electrode
C) Direct Mercury Electrode D) Differential Mercury Electrode

k) Explain in brief different techniques of analysis [3]
l) Write theory involve in titrations of strong, weak, and very weak acids and bases. [3]
m) Explain in brief estimation of Sodium Chloride by precipitation titration [3]
n) Write in brief on Bromatometry titration. [3]
o) Define conductivity cell and write application of conductometry. [3]

PART-B (50 Marks)

2.a) How can you Prepare and standardize 0.1M Oxalic acid solution.
b) Write a note on Primary and secondary standards. [5+5]

OR

3.a) What is error? Classify types of errors in detail.
b) How can you Prepare and standardize 0.1M Sulphuric acid solution. [5+5]

4. Explain in detail how can you estimate Ephedrine HCl by non aqueous titration? [10]

OR

5 What is acid base titration? Write classifications of acid base titrations. [10]

6.a) Write a note on Modified Volhard's,
b) Write Estimation of barium sulphate by gravimetry. [5+5]

OR

7.a) Discuss EDTA as a chelating agent.
b) Write Estimation of Magnesium sulphate by complexometric titration. [5+5]

8. Explain types of redox titration. [10]

OR

9. Give a note on concepts of oxidation and reduction. [10]

10. Explain the different methods to determine the end point in potentiometric titration. [10]

OR

11. Explain SHE (Standard Hydrogen Electrode) in detail with diagram. [10]

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k) Explain in brief different techniques of analysis [3]
l) Write theory involve in titrations of strong, weak, and very weak acids and bases. [3]
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PART-B (50 Marks)

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Pharmacy I Year I Semester Examinations, March - 2024

PHARMACEUTICAL ANALYSIS - I

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OR

9. Give a note on concepts of oxidation and reduction. [10]

10. Explain the different methods to determine the end point in potentiometric titration. [10]

OR

11. Explain SHE (Standard Hydrogen Electrode) in detail with diagram. [10]

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Code No: 281AE

R22

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Pharmacy I Year I Semester Examinations, April/May - 2025

PHARMACEUTICS

Time : 3 hours **Max Marks: 75**

Note: The end semester examinations will be conducted for 75 marks consisting of two parts viz. i) **Part- A** for 25 marks, ii) **Part - B** for 50 marks.

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PART - A (25 Marks)

1.a) What is the primary purpose of a pharmacopoeia? [1]
A) Drug marketing
B) Drug standardization
C) Drug synthesis
D) Drug distribution

b) Which factor does NOT affect paediatric dose calculation? [1]
A) Age
B) Body weight
C) Blood group
D) Body surface area

c) Which excipient improves solubility in liquid dosage forms? [1]
A) Suspending agent
B) Co-solvent
C) Preservative
D) Flavouring agent

d) Which powder is prone to liquefaction on storage? [1]
A) Effervescent
B) Deliquescent
C) Dusting
D) Eutectic

e) Which method is used to prepare emulsions? [1]
A) Dry gum method
B) Fusion method
C) Spatulation
D) Levigation

f) What is the purpose of throat paint? [1]
A) Systemic absorption
B) Local action
C) Lubrication
D) Cleansing

g) Which base is unsuitable for drugs sensitive to water? [1]
A) PEG
B) Cocoa butter
C) Gelatin
D) Glycero-gelatin

h) Which incompatibility arises due to drug interactions? [1]
A) Physical
B) Chemical
C) Therapeutic
D) None

i) Which semisolid dosage form is mostly water-washable? [1]
A) Ointment
B) Cream
C) Paste
D) Gel

j) Which factor does NOT influence dermal penetration? [1]
A) Skin hydration B) Molecular weight
C) Container material D) Vehicle used

k) Define dosage forms and classify them with examples. [3]
l) Explain the role of excipients in liquid dosage forms. [3]
m) Describe the preparation of syrups with their advantages. [3]
n) Define displacement value. [3]
o) Explain the preparation of pastes and their uses. [3]

PART-B (50 Marks)

2.a) Explain the role of pharmacy organizations in India's pharmaceutical growth.
b) Discuss errors in prescriptions and their prevention. [5+5]

OR

3.a) Explain the significance of IP, BP, and USP.
b) Discuss factors affecting posology. [5+5]

4.a) Describe the preparation of isotonic solutions using molecular weight.
b) Discuss the disadvantages of liquid dosage forms. [5+5]

OR

5.a) Describe solubility enhancement techniques for liquids.
b) Discuss the classification of powders with examples. [5+5]

6.a) Explain the preparation of deflocculated suspensions.
b) Discuss tests to identify the type of emulsion. [5+5]

OR

7.a) Describe the advantages and disadvantages of biphasic liquids.
b) Explain the preparation of elixirs with an example. [5+5]

8.a) Discuss the calculation of displacement value with an example.
b) Explain therapeutic incompatibilities with examples. [5+5]

OR

9.a) Describe the types of suppository bases with examples.
b) Explain the compression method for suppository preparation. [5+5]

10.a) Discuss factors influencing dermal penetration.
b) Define gels and their advantages. [5+5]

OR

11.a) Describe the evaluation methods for semisolid dosage forms.
b) Explain the evaluation tests for ointments. [5+5]

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R22

Code No: 281AE

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Pharmacy I Year I Semester Examinations, November - 2025
PHARMACEUTICS

Time : 3 hours **Max Marks: 75**

Note: The end semester examinations will be conducted for 75 marks consisting of two parts viz. i) **Part- A** for 25 marks, ii) **Part - B** for 50 marks.

- **Part-A** is compulsory question which consists of fifteen sub-questions. The first ten sub-questions are of Objective type/ Multiple Choice Questions, 2 from each unit and carry 1 mark each. The next five sub-questions are Short Answer Questions one from each unit and carry 3 marks each.
- **Part-B** consists of ten Long Answer Questions (numbered from 2 to 11) carrying 10 marks each. Each of these questions is from one unit and may contain sub-questions. For each question there will be an "either" "or" choice, which means that there will be two questions from each unit and the student should answer either of the two questions.

PART-A (25 Marks)

1.a) Which of the following is not an official pharmacopoeia? [1]
A) IP B) BP
C) WHO Formulary D) USP

b) The term posology refers to — [1]
A) Study of dosage B) Study of drug sources
C) Study of metabolism D) Study of incompatibilities

c) Which dosage form is intended for insertion into body cavities? [1]
A) Suppository B) Ointment
C) Emulsion D) Syrup

d) The freezing-point depression method is used for preparation of — [1]
A) Percent solution B) Isotonic solution
C) Alcoholic solution D) Normal solution

e) Which liquid dosage form is used for nasal administration? [1]
A) Liniment B) Ear drop
C) Nasal drop D) Mouthwash

f) Flocculating agents are added to — [1]
A) Increase viscosity B) Control particle aggregation
C) Decrease pH D) Reduce solubility

g) Which test is performed to confirm an oil-in-water type emulsion? [1]
A) Dye test B) Filter paper test
C) Creaming test D) Sedimentation test

h) Cocoa butter has polymorphic forms; which one is stable and melts at 34 °C? [1]
A) α B) β
C) γ D) δ

i) Which semisolid preparation is used for its emollient and protective properties? [1]
A) Paste B) Cream
C) Ointment D) Gel

j) Therapeutic incompatibility arises due to — [1]

A) Drug–drug interaction B) Microbial growth

C) Packaging error D) Storage temperature

k) Explain the scope and importance of pharmaceutics. [3]

l) Differentiate between imperial and metric systems of measurement. [3]

m) Write short note on effervescent and hygroscopic powders. [3]

n) Explain any two methods for solubility enhancement. [3]

o) Enumerate the factors affecting percutaneous drug absorption. [3]

PART-B (50 Marks)

2.a) Describe the historical evolution of pharmacy education in India.

b) Explain the functions and significance of Indian Pharmacopoeia. [5+5]

OR

3.a) Define and classify various pharmacopoeias used globally.

b) Discuss in detail the preparation and components of a prescription. [5+5]

4.a) Explain in detail the preparation of isotonic solutions by molecular concentration method.

b) Write note on geometric dilution and its importance. [5+5]

OR

5.a) Classify powders and describe official preparations like dusting and effervescent powders.

b) Write short note on excipients used in liquid dosage forms. [5+5]

6.a) Describe in detail the preparation and evaluation of elixirs, syrups and mouthwashes.

b) Write the advantages and disadvantages of monophasic liquids. [5+5]

OR

7.a) Define emulsions. Explain their types and formulation ingredients.

b) Discuss the methods for overcoming stability problems in suspensions. [5+5]

8.a) Discuss the various bases used in suppository formulation with examples.

b) Explain the evaluation parameters for suppositories. [5+5]

OR

9.a) Define pharmaceutical incompatibility. Explain chemical incompatibility with examples.

b) Write note on methods to prevent incompatibilities during formulation. [5+5]

10.a) Describe the classification and formulation of semisolid dosage forms.

b) Explain methods of preparation of gels and factors affecting their stability. [5+5]

OR

11.a) Discuss evaluation tests for semisolid dosage forms.

b) Write in detail about various excipients used in ointments and creams. [5+5]

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Code No: 281AE

R22

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Pharmacy I Year I Semester Examinations, September - 2024
PHARMACEUTICS

Time : 3 hours **Max Marks: 75**

Note: The end semester examinations will be conducted for 75 marks consisting of two parts viz. i) **Part- A** for 25 marks, ii) **Part - B** for 50 marks.

- **Part-A** is compulsory question which consists of fifteen sub-questions. The first ten sub-questions are of Objective type/ Multiple Choice Questions, 2 from each unit and carry 1 mark each. The next five sub-questions are Short Answer Questions one from each unit and carry 3 marks each.
- **Part-B** consists of ten Long Answer Questions (numbered from 2 to 11) carrying 10 marks each. Each of these questions is from one unit and may contain sub-questions. For each question there will be an "either" "or" choice, which means that there will be two questions from each unit and the student should answer either of the two questions.

PART- A

(25 Marks)

1.a) Drugs converted to suitable form are known as…. [1]
A) Excipient B) Source of drug
C) Dosage form D) API

b) Young's rule is [1]
A) Child dose = (age in years/ age + 12) x adult dose
B) Child dose = (age in years/ 20 + 12) x adult dose
C) Child dose = (age in month/ 150 + 12) x adult dose
D) Child dose = (age in month/ 20 + 12) x adult dose

c) Powders are more stable than …… [1]
A) Syrup B) Tablet
C) Capsule D) Elixirs

d) …… percentage of sodium chloride required to render a 0.5% solution of potassium chloride iso-osmotic with blood plasma. [1]
A) 0.72 B) 0.62
C) 0.52 D) 0.42

e) Elixirs are …… [1]
A) Semi solids B) Aqueous
C) Viscous D) Hydroalcoholic liquid

f) Suspending agent imparts … [1]
A) Solubility B) Viscosity
C) Absorption D) Wetting

g) Which of the following formula is used to calculate the amount of base that is replaced by the active ingredient? [1]
A) DV = nd/ [n(b+d)+w] B) DV = nd/ [n(d-b)-w]
C) DV = nd [n(d-b)+w] D) DV = nd/ [n(b+d)-w]

h) Precipitation is …… type of incompatibility [1]
A) Physical incompatibility B) Chemical incompatibility
C) Therapeutic incompatibility D) Both A and B

i) Cold cream is …… [1]
A) W/O/W emulsion B) O/W/O emulsion
C) W/O emulsion D) O/W emulsion

j) Which of the following is not characteristics of ointment bases [1]
A) Spreadability B) Washability
C) Skin penetration D) Viscosity

k) Write a note on parts of prescription. [3]

l) Prepare 500ml of 75% alcohol from 90% alcohol using allegation method. [3]

m) Explain the preparation of Enemas. [3]

n) Differentiate flocculated and deflocculated suspension. [3]

o) Give the fusion method preparation of ointment with a suitable example. [3]

PART - B (50 Marks)

2.a) Give a brief review on the development of Indian Pharmacopoeia.
b) Write about the career opportunities in Pharmacy profession.
c) How child dose is calculated on the basis of age, bodyweight and body surface area? [3+3+4]

OR

3.a) Give a brief review on the development of British Pharmacopoeia.
b) Enumerate the factors affecting posology.
c) Discuss about handling of Prescription. [3+3+4]

4.a) Write general method of calculation of proof spirit.
b) Discuss advantages and disadvantages of powders.
c) Enumerate various methods to enhance solubility of drugs. [3+3+4]

OR

5.a) Differentiate hygroscopic powders and dusting powders and give example.
b) Explain effervescent powders and eutectic mixtures with example.
c) Write a note on geometric dilutions. [3+4+3]

6.a) How you will prepare simple syrup?
b) Discuss physical stability of suspension.
c) Explain different components used for preparation of suspension. [3+3+4]

OR

7.a) Discuss differences between liniment and lotion.
b) Discuss the various suspending agents used for stabilizing the suspensions.
c) Write various stability problems in suspension. [3+3+4]

8.a) Explain chemical incompatibility with examples.
b) Write a note on different bases used in preparation of Suppositories?
c) Explain therapeutic incompatibility. [3+3+4]

OR

9.a) Explain physical incompatibility and methods to overcome.
b) Calculate the displacement value of Zinc oxide in Theobroma oil suppositories, which contains 50% of zinc oxide and prepared in 1g mold. The weight of 10 suppositories is 14.68g.
c) Explain various methods to adjust isotonicity. [3+3+4]

10.a) Describe the different methods for preparation of ointments.
b) Explain the preparation of vanishing cream.

OR

11.a) Write the mechanism of dermal penetration of drugs.
b) Describe the factors influencing dermal penetration of drugs.
c) Explain about various ointment bases.

[5+5]

[3+3+4]

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Code No: 281AD

R22

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Pharmacy I Year I Semester Examinations, April/May -2025
PHARMACEUTICAL INORGANIC CHEMISTRY

Time : 3 hours **Max Marks: 75**

Note: The end semester examinations will be conducted for 75 marks consisting of two parts viz. i) **Part- A** for 25 marks, ii) **Part - B** for 50 marks.

- **Part-A** is compulsory question which consists of fifteen sub-questions. The first ten sub-questions are of Objective type/ Multiple Choice Questions, 2 from each unit and carry 1 mark each. The next five sub-questions are Short Answer Questions one from each unit and carry 3 marks each.
- **Part-B** consists of ten Long Answer Questions (numbered from 2 to 11) carrying 10 marks each. Each of these questions is from one unit and may contain sub-questions. For each question there will be an "either" "or" choice, which means that there will be two questions from each unit and the student should answer either of the two questions.

PART- A

(25 Marks)

1.a) Identify the apparatus used in the limit test for Arsenic [1]
A) Nessler cylinder B) Kipps apparatus
C) Gutzeit apparatus D) Conical flask

b) The first edition of IP was published in [1]
A) 1955 B) 1965
C) 1945 D) 1966

c) Buffer solutions are those which resist the change in [1]
A) pH B) Colour
C) Acidity D) Alkalinity

d) Oral rehydration salt is used in the treatment for [1]
A) Hydration B) Dehydration
C) For taste D) Dental caries

e) KI stands for [1]
A) Potassium iodine B) Potassium chloride
C) Potassium iodide D) Potassium iodate

f) Sodium bicarbonate is assayed by [1]
A) Acid-base titration B) Back titration
C) Non aqeous titration D) Complexometry

g) Select the drug used in the treatment of anaemia [1]
A) Antidote B) Emetics
C) Expectorants D) Haematinics

h) Select the drug used as antidote in cyanide poisoning [1]
A) Sodium thiosulphate B) Ferrous sulphate
C) Zinc sulphate D) Potassium iodide

i) Radioactive decay is a reaction of------order [1]
A) First B) Second
C) Third D) Zero

j) A device used for the measurement of Radioactivity is [1]
A) Mass spectrophotometer B) Nuclear reactor
C) Cyclotron D) Geiger Muller Counter

k) Summarize the principle and procedure in the limit test for sulphates. [3]
l) Outline the composition of ORS. [3]
m) List the ideal properties of Antacids. [3]
n) Define expectorants and explain the assay of Ammonium chloride. [3]
o) Explain the precautionary measures required to handle radioactive substances. [3]

PART - B (50 Marks)

2.a) Outline the sources and types of impurities in pharmaceutical substances.
b) Elaborate on the history of Pharmacopoeia. [5+5]

OR

3. Explain the principle involved in the Limit test for Arsenic with a neat diagram of the apparatus used for it. [10]

4.a) Define dentifrices, Classify them with an example.
b) Discuss on the role of fluoride as an Anticaries agent. [5+5]

OR

5.a) Define buffers and explain the types of buffers and its preparation.
b) Illustrate the importance of buffers in pharmacy. [5+5]

6.a) Discuss the mechanism of antimicrobials and classify them.
b) Explain the principle, reaction and procedure involved in the assay of hydrogen peroxide. [5+5]

OR

7.a) Define cathartics with an example.
b) Explain the principle, reaction and procedure involved in the assay of Sodium bicarbonate. [5+5]

8.a) Define and classify antidotes with examples.
b) Write a note on activated charcoal. [5+5]

OR

9.a) Define Emetics with example.
b) Illustrate the preparation, assay and uses of Copper sulphate. [5+5]

10.a) Define radioactivity and explain the properties of alpha, beta and gamma rays.
b) Summarize radioisotopes and half- life period of radioactivity. [5+5]

OR

11.a) Discuss in detail the measurement of radioactivity.
b) Explain the applications of radioactive compounds. [5+5]

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R22

Code No: 281AD

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Pharmacy I Year I Semester Examinations, November - 2025
PHARMACEUTICAL INORGANIC CHEMISTRY

Time : 3 hours **Max Marks: 75**

Note: The end semester examinations will be conducted for 75 marks consisting of two parts viz. i) **Part- A** for 25 marks, ii) **Part - B** for 50 marks.

- **Part-A** is compulsory question which consists of fifteen sub-questions. The first ten sub-questions are of Objective type/ Multiple Choice Questions, 2 from each unit and carry 1 mark each. The next five sub-questions are Short Answer Questions one from each unit and carry 3 marks each.
- **Part-B** consists of ten Long Answer Questions (numbered from 2 to 11) carrying 10 marks each. Each of these questions is from one unit and may contain sub-questions. For each question there will be an "either" "or" choice, which means that there will be two questions from each unit and the student should answer either of the two questions.

PART- A **(25 Marks)**

1.a) The first edition of the Indian Pharmacopoeia was published in [1]
A) 1947 B) 1950
C) 1955 D) 1960

b) Leaching of metals or plasticizers from containers represents [1]
A) Raw material impurity B) Packaging impurity
C) Process impurity D) Solvent impurity

c) The main abrasive used in tooth powders is [1]
A) Calcium carbonate B) Magnesium oxide
C) Sodium chloride D) Boric acid

d) Sodium chloride is used in replacement therapy mainly to [1]
A) Increase calcium level B) Restore sodium and chloride ions
C) Correct alkalosis D) Supply potassium

e) Which acidifier is used to restore gastric acidity in achlorhydria? [1]
A) Dilute Hydrochloric acid B) Ammonium chloride
C) Citric acid D) Sodium chloride

f) Which of the following is a systemic antacid? [1]
A) Sodium bicarbonate B) Aluminum hydroxide gel
C) Magnesium hydroxide D) Calcium carbonate

g) Ammonium chloride acts as an expectorant by [1]
A) Directly stimulating the cough center
B) Irritating gastric mucosa reflexly to increase bronchial secretion
C) Depressing the respiratory center
D) Forming a protective film over mucosa

h) Ferrous gluconate is preferred over ferrous sulphate due to [1]
A) It contains more elemental iron B) It causes less gastric irritation
C) It is less expensive D) It acts faster

i) The unit of radioactivity (disintegration per second) in the SI system is [1]
A) Becquerel (Bq) B) Curie (Ci)
C) Rutherford (Rd) D) Roentgen (R)

j) Sodium iodide I^{131} is mainly used in the diagnosis and treatment of [1]

A) Liver diseases B) Bone fractures

C) Thyroid disorders D) Kidney stones

k) Define "impurity" in pharmaceutical substances. [3]

l) What is the importance of buffer in pharmacy? [3]

m) Give the synonym of $NaHCO_3$, $MgSO_4$ and magnesium hydroxide. [3]

n) Give the chemical formula and medicinal use of sodium thiosulphate. [3]

o) What type of shielding is used for α, β, and γ radiations? [3]

PART-B (50 Marks)

2.a) Explain the principle and procedure for the limit test for sulphates.

b) What do you mean by the term monograph? What are the contents of the monograph in detail? [5+5]

OR

3.a) Write in detail the principle and reactions involved in the limit test for arsenic.

b) Give a detailed account of the history of Pharmacopoeia. [5+5]

4.a) What are buffers derive from the Henderson-hasselbalch equation for buffers?

b) Explain the preparation, assay principle, storage conditions and medical uses of calcium Gluconate injection. [5+5]

OR

5.a) What is electrolyte combination therapy? Explain a note on ORS.

b) Explain the physiological role of sodium, calcium, chloride and bicarbonate ions. [5+5]

6.a) Define cathartics. Give the preparation and uses of any two cathartics.

b) Define and classify antacids. Discuss the preparation, assay principle and Medicinal uses of Baking soda. [5+5]

OR

7.a) What are GIT agents? Classify them with examples. Write a note on acidifiers.

b) Write the principle for the assay of Chlorinated lime and boric acid. [5+5]

8.a) Explain the method of preparation and assay of Ammonium chloride.

b) What are Haematinics? Write the preparation and assay of ferrous sulphate. [5+5]

OR

9.a) Explain the principle and reactions involved in the assay of copper sulphate.

b) Define and classify antidotes with examples. Write a note on activated charcoal. [5+5]

10.a) Explain in detail any one method employed for the measurement of radioactivity.

b) Describe the properties of α, ß and γ radiations. [5+5]

OR

11.a) What are radiopharmaceuticals? Discuss the importance of radioisotopes used in Medicine.

b) Give a brief account of hazards associated with radiopharmaceuticals. [5+5]

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Code No: 281AD

R22

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Pharmacy I Year I Semester Examinations, September - 2024

PHARMACEUTICAL INORGANIC CHEMISTRY

Time: 3 hours **Max Marks: 75**

Note: The end semester examinations will be conducted for 75 marks consisting of two parts viz. i) **Part- A** for 25 marks, ii) **Part - B** for 50 marks.

- **Part-A** is compulsory question which consists of fifteen sub-questions. The first ten sub-questions are of Objective type/ Multiple Choice Questions, 2 from each unit and carry 1 mark each. The next five sub-questions are Short Answer Questions one from each unit and carry 3 marks each.
- **Part-B** consists of ten Long Answer Questions (numbered from 2 to 6 carrying 10 marks each. Each of these questions is from one unit and may contain sub-questions. For each question there will be an "either" "or" choice, which means that there will be two questions from each unit and the student should answer either of the two questions.

PART- A

(25 Marks)

1.a) In the limit test for iron, purple color is due to the formation of: [1]

A) Ferrous mercaptoacetate B) Ferric thioglycollate

C) Dithione D) Thioglycolic acid

b) Which one of the following limit tests is based on the comparison of color? [1]

A) Limit test of sulphate B) Limit test of chloride

C) Limit test of iron D) Both (A) and (C)

c) Fluoride inhibits carries formation via [1]

A) Decrease acid solubility of enamel B) Bacterial inhibition

C) Both (A) and (B) D) Increase acid solubility of enamel

d) Which one of the following is used as systemic alkalizer? [1]

A) Sodium chloride B) Sodium bicarbonate

C) Sodium sulphate D) Sodium acetate

e) Based on the mode of action or use topical agents are divided into [1]

A) Protective B) Antimicrobial

C) Astringents D) All

f) Combination of antacids is used, because [1]

A) Reduces constipation effect B) Reduces laxative action

C) Produces synergistic action D) All

g) Which of the following is used in the treatment of cyanide poisoning? [1]

A) Sodium metabisulphite B) Sodium dihydrogen phosphate

C) Sodium thiosulphate D) Sodium sulphate

h) Expectorant drug is – [1]

A) Copper sulphate B) Ferrous sulphate

C) Potassium iodide D) Zinc sulphate

i) X-ray is an example of [1]

A) Alpha ray B) Beta ray

C) Gamma ray D) Delta ray

j) I-125 is used as [1]

A) Thyroid functioning agent

B) To detect and estimating drug hormones in the body fluid

C) Both (A) and (B)

D) None of the above

k) Write down the principle of the modified limit test for Chloride. [3]

l) Write down the composition of ORS. [3]

m) What is achlorhydria? How will you treat achlorhydria? [3]

n) Write the mechanism of action of Astringents with examples. [3]

o) Write a short note on storage conditions of radioactive pharmaceuticals. [3]

PART - B

(50 Marks)

2. How the impurities present in pharmaceutical inorganic substances can be identified? What principle is applied? Discuss with example. [10]

OR

3. What do you understand by Limit test? Give the Principle and procedure involved in the limit test of Arsenic and Iron. [10]

4. Derive the buffer equation for Weak acid and its salt. How their pHs remain constant after the addition of a base? Discuss with example. Write the function of physiological ions. [10]

OR

5. What are the major electrolytes of ECF and ICF? Discuss the role of sodium and potassium inside our body. [10]

6. What are antacids? Classify them with examples. Give the ideal properties of antacids. Write the preparation, assay and uses of sodium bicarbonate. [10]

OR

7. What are antimicrobial agents? Classify and explain mechanism of Potassium permanganate and Hydrogen peroxide. [10]

8. Define Emetics with example. What is the role of zinc Sulphate as an astringent? [10]

OR

9. Define antidote. What is cyanide poisoning? Classify antidote with example based on their mechanism of action. [10]

10. Define Radiopharmaceutical. Write about their Storage condition and Pharmaceutical applications. [10]

OR

11. Write a note on Radio-isotope. Write the properties of alpha, beta and gamma radiation. [10]

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Code No: 281AD

R22

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Pharmacy I Year I Semester Examinations, March - 2024

PHARMACEUTICAL INORGANIC CHEMISTRY

Time: 3 hours **Max Marks: 75**

Note: The end semester examinations will be conducted for 75 marks consisting of two parts viz. i) **Part- A** for 25 marks, ii) **Part - B** for 50 marks.

- **Part-A** is compulsory question which consists of fifteen sub-questions. The first ten sub-questions are of Objective type/ Multiple Choice Questions, 2 from each unit and carry 1 mark each. The next five sub-questions are Short Answer Questions one from each unit and carry 3 marks each.
- **Part-B** consists of ten Long Answer Questions (numbered from 2 to 11) carrying 10 marks each. Each of these questions is from one unit and may contain sub-questions. For each question there will be an "either" "or" choice, which means that there will be two questions from each unit and the student should answer either of the two questions.

PART- A

(25 Marks)

1.a) What is the principle of the limit test for sulphate using barium chloride? [1]

A) Sulphate ions form a white precipitate with barium chloride.
B) Sulphate ions form a yellow precipitate with barium chloride.
C) Sulphate ions form a red precipitate with barium chloride.
D) Sulphate ions form a black precipitate with barium chloride.

b) The international pharmacopoeia was produced by [1]

A) International Union of Pharmacists B) World Health Organization
C) United Nations D) Commonwealth Union

c) In conditions resulting in water loss which also results in electrolyte imbalance, Sodium Chloride IP is given in such conditions by intravenous route in which isotonic concentration? [1]

A) 0.9% w/v. B) 0.95% v/v
C) 0.19% w/v D) 1% w/v

d) Which of the following is not an ingredient present in ORS? [1]

A) Sodium Chloride B) Potassium Chloride
C) Glucose D) Maltose

e) What is true about the antacid? [1]

A) It is an alkaline substance B) Used for inhibiting the release of acid
C) Water soluble in nature D) All of the above

f) Mechanism of action like oxidation for antimicrobial activity reacts with [1]

A) Peptide linkage B) Sulfhydryl group of enzyme
C) Both D) None

g) Ammonium Chloride is useful in maintaining in acid base equilibrium of the body is also useful as, [1]

A) Expectorant B) Antacid
C) Antioxidant D) Protective.

h) Astringents are used as [1]

A) Styptic action B) Anti-inflammatory action
C) Antiperspiring agent D) All of above

i) Radiopharmaceutical use in study of thyroid uptake [1]

A) I-42 B) I-51

C) I-131 D) S-35

j) Which of following is used for estimation of reticuloendothelial activity? [1]

A) Gold solution B) Cobalt

C) Cyanocobalamine D) All

k) Write the principle for modified limit test for Sulphate. [3]

l) Elaborate on role of fluoride in the treatment of dental caries. [3]

m) Mention the uses of Kaolin and Bentonite. [3]

n) Mention the category and significance of sodium nitrite. [3]

o) Describe about the storage conditions of radiopharmaceuticals. [3]

PART-B

(50 Marks)

2.a) Explain in detail various types of impurities.

b) Mention the principle for limit test of Sulphate.

c) List various editions and volumes of Indian Pharmacopoeia in series. [5+2+3]

OR

3.a) Briefly write the history of British Pharmacopoeia.

b) Mention the principle for limit test of Chloride.

c) Write the general principle for limit test of Heavy metals. [3+4+3]

4.a) Elaborate on significance of electrolytes used in replacement therapy.

b) Write the assay procedure for Calcium gluconate.

c) Explain in detail various methods of adjusting tonicity. [2+3+5]

OR

5.a) Explain in detail various methods for measurement of tonicity.

b) Describe about the significance of desensitizing agents.

c) How do you do calculations of isotonicity. [5+2+3]

6.a) Write the assay procedure for Sodium bicarbonate.

b) Mention the composition, chemical formula and uses of Aluminum hydroxide gel.

c) Define and tell about the mechanism of anti-microbial. [3+3+4]

OR

7.a) Mention the significance of Magnesium sulphate and Sodium orthophosphate.

b) Add a brief note on preparation method and use of potassium permanganate.

c) Write the assay procedure for Hydrogen peroxide. [3+3+4]

8.a) Mention the assay procedure for Ammonium chloride.

b) Define and describe briefly about Emetics.

c) Describe the preparation method and use of sodium potassium tartarate. [4+2+4]

OR

9.a) Mention the assay procedure for Copper sulphate.

b) Mention the preparation method and uses of Potassium iodide.

c) Mention the role of ferrous gluconate as haematinic. [5+3+2]

10.a) Define Radiopharmaceuticals and radioactivity.
b) Describe about Sodium iodide I^{131}.
c) Describe in detail about the modern methods for measurement of radioactivity. [2+2+6]

OR

11.a) Explain about measurement of radioactivity by Geiger muller counter.
b) What are the precautions to be taken for radio pharmaceuticals?
c) Mention the pharmaceutical applications of radioactive substances. [4+3+3]

--ooOoo--

R22

Code No: 281AA

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Pharmacy I Year I Semester Examinations, November - 2025

COMMUNICATION SKILLS

Time: 3 hours **Max Marks: 75**

Note: The end semester examinations will be conducted for 75 marks consisting of two parts viz. i) **Part- A** for 25 marks, ii) **Part - B** for 50 marks.

- **Part-A** is compulsory question which consists of fifteen sub-questions. The first ten sub-questions are of Objective type/ Multiple Choice Questions, 2 from each unit and carry 1 mark each. The next five sub-questions are Short Answer Questions one from each unit and carry 3 marks each.
- **Part-B** consists of ten Long Answer Questions (numbered from 2 to 11) carrying 10 marks each. Each of these questions is from one unit and may contain sub-questions. For each question there will be an "either" "or" choice, which means that there will be two questions from each unit and the student should answer either of the two questions.

PART- A

(25 Marks)

1.a) What is feedback in communication? [1]

A) Response from receiver B) The message sent

C) The communication channel D) Background noise

b) Which of the following is a psychological barrier to communication? [1]

A) Language difference B) Prejudice

C) Distance D) Lack of network

c) What is face-to-face communication? [1]

A) Communication through letters B) Communication through calls

C) Direct in-person communication D) Online communication only

d) Give an example of direct communication style: [1]

A) Email writing B) Face-to-face instruction

C) Group messaging D) Communication through a circular

e) What is the importance of self-awareness in listening? [1]

A) It distracts the listener B) It helps to understand others better

C) It reduces concentration D) It increases misunderstanding

f) When is written communication preferred? [1]

A) When the topic is complex B) When oral talk is sufficient

C) When message is short D)When communication is informal

g) What is the purpose of an interview? [1]

A) To test luck B)To share gossip

C) To assess a candidate D) To waste time

h) Which of the following helps overcome stage fear in presentations? [1]

A) Avoiding preparation B) Proper planning and rehearsal

C) Speaking fast D) Ignoring audience

i) One main purpose of a group discussion is to: [1]

A) Check writing skill B) Evaluate teamwork and communication

C) Test computer knowledge D) Assess drawing skills.

j) Which of the following is an advantage of teamwork? [1]

A) Decreased efficiency B) Poor communication

C) Collective problem solving D) Increased conflict

k) Explain visual perception in communication. [3]

l) Briefly describe the considerate communication style. [3]

m) What are the essential features of good written communication? [3]

n) List the techniques of delivering a presentation. [3]

o) Write short notes on effective participation in group discussions. [3]

PART-B

(50 Marks)

2. Define communication and explain its importance. [10]

OR

3. Discuss the perspectives in communication. [10]

4. Explain different types of communication with examples. [10]

OR

5. Discuss the importance and types of non-verbal communication. [10]

6. Explain active listening. How can one become an active listener? [10]

OR

7. Describe the structure and organization of written communication. [10]

8. Explain the essentials of an effective presentation. [10]

OR

9. Describe various stages involved in preparing for an interview. [10]

10. Discuss the importance of communication in a group discussion. [10]

OR

11. Explain how communication skills contribute to teamwork and leadership. [10]

--ooOoo--

R22

Code No: 281AA

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Pharmacy I Year I Semester Examinations, April/May - 2025

COMMUNICATION SKILLS

Time : 3 hours **Max Marks: 75**

Note: The end semester examinations will be conducted for 75 marks consisting of two parts viz. i) **Part- A** for 25 marks, ii) **Part - B** for 50 marks.

- **Part-A** is compulsory question which consists of fifteen sub-questions. The first ten sub-questions are of Objective type/ Multiple Choice Questions, 2 from each unit and carry 1 mark each. The next five sub-questions are Short Answer Questions one from each unit and carry 3 marks each.
- **Part-B** consists of ten Long Answer Questions (numbered from 2 to 11) carrying 10 marks each. Each of these questions is from one unit and may contain sub-questions. For each question there will be an "either" "or" choice, which means that there will be two questions from each unit and the student should answer either of the two questions.

PART- A **(25 Marks)**

1.a) Which of the following is not a barrier to communication? [1]
A) Physical barrier B) Language barrier
C) Understanding D) Emotional barrier

b) Encoding in the communication process refers to: [1]
A) Receiving the message B) Sending feedback
C) Creating the message D) Decoding the message

c) Body language is a form of: [1]
A) Verbal communication B) Non-verbal communication
C) Written communication D) Oral communication

d) The systematic communication style is best described as: [1]
A) Energetic and persuasive B) Logical and structured
C) Friendly and empathetic D) Assertive and direct

e) Active listening requires: [1]
A) Interrupting frequently B) Avoiding eye contact
C) Full attention D) Multitasking

f) Which of these is not an effective written communication strategy? [1]
A) Know your audience B) Use long sentences
C) Clear subject line D) Put the main point first

g) The purpose of an interview is to: [1]
A) Read body language B) Assess knowledge and skills
C) Deliver a presentation D) Discuss hobbies

h) One of the Do's during an interview is: [1]
A) Be late B) Dress casually
C) Greet the interviewer D) Use slang

i) A good group discussion requires: [1]
A) Dominating others B) Listening carefully
C) Interrupting frequently D) Speaking at length

j) One of the common don'ts in group discussion is: [1]

A) Making eye contact B) Giving facts

C) Personal attacks D) Staying on topic

k) Explain components of the communication process. [3]

l) Describe the four styles of communication using examples. [3]

m) What is active listening? List two ways to become an active listener. [3]

n) Mention any three techniques of delivery for effective presentations. [3]

o) List any three do's and don'ts in a group discussion. [3]

PART-B (50 Marks)

2.a) Explain the communication process with a diagram.

b) Discuss any four types of barriers to communication with examples. [5+5]

OR

3.a) Describe how perspectives in communication are influenced by factors like past experiences and environment.

b) Write a short note on visual perception and its effect on communication. [5+5]

4.a) Explain the difference between verbal and non-verbal communication with examples.

b) Describe the Considerate Communication Style with a real-life example. [5+5]

OR

5.a) Discuss the importance of tone of voice and body language in face-to-face communication.

b) Illustrate the Communication Styles Matrix with suitable examples. [5+5]

6.a) What is the role of self-awareness in developing listening skills?

b) Explain the situations where written communication is preferable to verbal communication. [5+5]

OR

7.a) What are the key steps in writing an effective email?

b) Explain the importance of subject lines and message organization. [5+5]

8.a) What are the Do's and Don'ts one should follow while attending an interview?

b) Discuss the structure of an effective presentation. [5+5]

OR

9.a) How can one overcome fears of public speaking during presentations?

b) Explain planning and delivering a presentation with relevant points. [5+5]

10.a) What is the significance of communication skills in group discussions?

b) Describe any five strategies to participate effectively in group discussions. [5+5]

OR

11.a) What are the common errors and distractions in group discussions?

b) Write a brief note on evaluating one's performance in a GD. [5+5]

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Code No: 281AA

R22

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Pharmacy I Year I Semester Examinations, March - 2024
COMMUNICATION SKILLS

Time : 3 hours **Max Marks: 75**

Note: The end semester examinations will be conducted for 75 marks consisting of two parts viz. i) **Part- A** for 25 marks, ii) **Part - B** for 50 marks.

- **Part-A** is compulsory question which consists of fifteen sub-questions. The first ten sub-questions are of Objective type/ Multiple Choice Questions, 2 from each unit and carry1 mark each. The next five sub-questions are Short Answer Questions one from each unit and carry 3 marks each.
- **Part-B** consists of ten Long Answer Questions (numbered from 2 to 11) carrying 10 marks each. Each of these questions is from one unit and may contain sub-questions. For each question there will be an "either" "or" choice, which means that there will be two questions from each unit and the student should answer either of the two questions.

PART- A

(25 Marks)

1.a) What is communication skill? [1]
A) speaking well B) listening well
C) writing and reading well D) a, b and c together

b) Which of the following is a part of the communication process? [1]
A) time B) source C) setting D) manners

c) Which is the most effective kind of communication in small contexts? [1]
A) one-to-many B) many-to-one C) face-to-face D) through telephone call

d) If two people are engaged in a conversation, it is_____communication. [1]
A) non-verbal B) written C)oral D) haptics

e) Which of the following skills comes first to a mother tongue learner? [1]
A) reading B) listening C) speaking D) writing

f) Which of the items below is seen first by a person reading a letter? [1]
A) subject line B) signature C) body of the letter D) mistakes

g) The purpose of an interview is to see the –of a candidate. [1]
A) appearance B) age C) knowledge D) suitability

h) Which of the following is a serious "don't" in an interview? [1]
A) going unprepared B) preparing a good C.V.
C) arriving before time D) greeting interviewers.

i) Group Discussion is a_____form of selection. [1]
A) Recent B) very old C) poor D) artificial

j) Is it good to shout at others in a group discussion? [1]
A) yes B) no C) not always D) sometimes

k) What are the elements of communication process? [3]

l) How is the tone of voice important in communication? [3]

m) Describe active listening briefly. [3]

n) Why are oral interviews essential in job selection process? [3]

o) Group Discussion is not a good choice for selection people for jobs. Do you agree? [3]

PART-B

(50 Marks)

2. Explain the nature, definition and importance of communication in an office and in everyday life. [10]

OR

3. Describe the process of communication, defining each part of communication. [10]

4. Write in detail about the role played by body language as opposed to verbal communication. [10]

OR

5. Describe in detail the communication matrix. [10]

6. What are the qualities of a good and active listener? Give suitable examples. [10]

OR

7. Elaborate on the factors of effective written communication. [10]

8. What is the purpose of conducting interviews? Why is a personal interview for selecting candidates necessary? [10]

OR

9. How do you prepare for an interview? Describe the various stages in your presentation. [10]

10. How far is Group Discussion itself an effective mode of selection of candidates for jobs? [10]

OR

11. What are some of the positive behaviours expected from the members of a group discussion? Explain with examples. [10]

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Code No: 281AG

R22

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Pharmacy I Year I Semester Examinations, April/May -2025

REMEDIAL MATHEMATICS

Time : 3 hours **Max Marks: 75**

Note: The end semester examinations will be conducted for 75 marks consisting of two parts viz. i) **Part- A** for 25 marks, ii) **Part - B** for 50 marks.

- **Part-A** is compulsory question which consists of fifteen sub-questions. The first ten sub-questions are of Objective type/ Multiple Choice Questions, 2 from each unit and carry 1 mark each. The next five sub-questions are Short Answer Questions one from each unit and carry 3 marks each.
- **Part-B** consists of ten Long Answer Questions (numbered from 2 to 11) carrying 10 marks each. Each of these questions is from one unit and may contain sub-questions. For each question there will be an "either" "or" choice, which means that there will be two questions from each unit and the student should answer either of the two questions.

PART- A (25 Marks)

1.a) If $2A + 3B = \begin{bmatrix} 2 & -1 & 4 \\ 3 & 2 & 5 \end{bmatrix}$ and $A + 2B = \begin{bmatrix} 5 & 0 & 3 \\ 1 & 6 & 2 \end{bmatrix}$ then B = ... [1]

(A) $\begin{bmatrix} 8 & -1 & 2 \\ -1 & 10 & -1 \end{bmatrix}$ (B) $\begin{bmatrix} 8 & 1 & 2 \\ -1 & 10 & -1 \end{bmatrix}$

(C) $\begin{bmatrix} 8 & 1 & 2 \\ -1 & 10 & -1 \end{bmatrix}$ (D) $\begin{bmatrix} 8 & 1 & 2 \\ 1 & 10 & 1 \end{bmatrix}$

b) Find the value of x, if the given matrix $\begin{bmatrix} 1 & 2 & 5 \\ 2 & x & 10 \\ 3 & 1 & -2 \end{bmatrix}$ is singular [1]

(A) 4 (B) -4

(C) 1/4 (D) -1/4

c) Using the property of logarithms, $\log_3 x = \log_3 4 + \log_3 7$, what is the value of x ..... [1]

d) The characteristic of the logarithm of 3174 is ..... [1]

e) $\lim_{x \to 3} \frac{x^4 - 81}{2x^2 - 5x - 3}$ = [1]

(A) 0 (B) Infinity

(C) 108/7 (D) 10/7

f) If $y = a^x$ then $\frac{dy}{dx}$ is equal to [1]

(A) $1 + loga$ (B) $a^x + loga$

(C) $a^x loga$ (D) $a^x log e^x$

g) $\int \frac{x^3}{1+x^4} dx =$ [1]

(A) $\log(x^4 + 1)$ (B) $-\log(x^4 + 1)$

(C) $\frac{1}{4}\log(x^4 + 1)$ (D) $-\frac{1}{4}\log(x^4 + 1)$

h) Find $\int (x^2+5)\,dx$ = ---------- [1]

(A) $\frac{x^3}{3}+5x$ (B) $\frac{x^3}{3}-5x$

(C) $\frac{x^3}{3}+5x+2$ (D) $\frac{x^3}{3}+5x+1$

i) The order of differential equation $\frac{d^3y}{dx^3}+2\frac{d^2y}{dx^2}-3\frac{dy}{dx}+6x^4y=0$ is ..... [1]

j) Solution of differential equation $xdy+ydx=0$ is [1]

(A) $xy=c$ (B) $x^2+y=c$

(C) $x^2+y^2=c$ (D) $x+y=c$

k) Find the Inverse of a matrix $A=\begin{bmatrix}1 & 0 & 0\\ 3 & 5 & 0\\ 2 & 1 & 8\end{bmatrix}$. [3]

l) Find the value of x, if $\frac{\log 144}{\log 12}=\log x$. [3]

m) Find the positive integer 'n' so that $\lim_{x\to 3}\frac{x^n-3^n}{x-3}=108$. [3]

n) Evaluate $I=\int_0^{\pi/2}\frac{\sqrt{\tan x}}{\sqrt{\tan x}+\sqrt{\cot x}}\,dx$. [3]

o) Solve $\frac{dy}{dx}=3x^2+\frac{1}{x}$ [3]

PART-B (50 Marks)

2. Find the value of the given variables by using Gauss Elimination method: [10]

$x+3y+6z=12\,;\ x+4y+5z=14; x+6y+7z=18$

OR

3.a) Find $\Delta=\begin{vmatrix}5 & 2 & 3\\ 2 & 4 & 5\\ 1 & 8 & 7\end{vmatrix}$

b) Find the adjoint of the matrix $A=\begin{bmatrix}3 & 6\\ 6 & 12\end{bmatrix}$ [5+5]

4.a) Evaluate $\sqrt{\frac{41.32\times 20.18}{12.69}}$

b) An equilibrium system for the reaction between hydrogen and iodine to ven hydrogen iodine at 670 k in a 5 litre flask contains 0.4 mole of hydrogen, 0.4 mole of iodine and 2.4 moles of hydrogen iodine. Calculate equilibrium constant. [5+5]

OR

5.a) Calculate the PH value of 0.001 M NaOH.

b) Find the antilog of -0.62. [5+5]

6.a) If $y=\frac{\tan x+\sec x}{\sec x \tan x}$ find $\frac{dy}{dx}$.

b) If $y=(\sin x)^x$ find $\frac{dy}{dx}$. [5+5]

OR

7.a) Differentiate with respect to x, $y=\frac{e^x+tanx}{cotx-x^2}$.

b) Find $\frac{dy}{dx}$ if, $x=a(cost+tsint), y=a(sint-tcost)$. [5+5]

8.a) Evaluate $\int \frac{sin\sqrt{x}}{\sqrt{x}}\,dx$.

b) Evaluate $\int e^x cosx\,dx$. [5+5]

OR

9.a) Evaluate $\int \frac{3x+2}{(x-2)(x+1)^2}dx$.

b) Evaluate $\int_0^{\pi} xlogsinx\,dx$. [5+5]

10. Solve $(8y-x^2y)\frac{dy}{dx}+x-xy^2=0$. [10]

OR

11. Solve $\frac{dy}{dx}+2xy=1$. [10]

--ooOoo--

R22

Code No: 281AF

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Pharmacy I Year I Semester Examinations, April/May -2025

REMEDIAL BIOLOGY

Time : 3 hours **Max Marks: 75**

Note: The end semester examinations will be conducted for 75 marks consisting of two parts viz. i) **Part- A** for 25 marks, ii) **Part - B** for 50 marks.

- **Part-A** is compulsory question which consists of fifteen sub-questions. The first ten sub-questions are of Objective type/ Multiple Choice Questions, 2 from each unit and carry 1 mark each. The next five sub-questions are Short Answer Questions one from each unit and carry 3 marks each.
- **Part-B** consists of ten Long Answer Questions (numbered from 2 to 11) carrying 10 marks each. Each of these questions is from one unit and may contain sub-questions. For each question there will be an "either" "or" choice, which means that there will be two questions from each unit and the student should answer either of the two questions.

PART - A **(25 Marks)**

1.a) Veins of the leaves are useful for [1]

A) Mechanical support
B) Transport of water and minerals
C) Transport of organic nutrients
D) All of the above

b) _____ is an edible underground stem [1]

A) Potato
B) Groundnut
C) Sweet potato
D) Carrot

c) The normal diastolic blood pressure in a normal healthy adult human is [1]

A) 80 mm Hg
B) 60 mm Hg
C) 90 mm Hg
D) 110 mm Hg

d) _____ is a condition where plaque builds up on the inside of arteries. [1]

A) Arthrocentesis
B) Arthralgia
C) Arthritis
D) Atherosclerosis

e) These cells of the testes secrete testosterone [1]

(a) Sertoli cells
(b) Cells of germinal epithelium
(c) Cells of Leydig or interstitial cells
(d) Secondary spermatocytes

f) Afferent neurons carry nerve impulses from [1]

A) CNS to muscles
B) CNS to receptors
C) Receptors to CNS
D) Effector organs to CNS

g) The first acceptor of CO2 in C4 plants is [1]

A) Aspartic acid
B) Malic acid
C) Oxaloacetic acid
D) Phosphoenolpyruvate

h) Which of the following minerals plays a major role in energy storage and transfer of ADP into ATP molecules? [1]

A) Phosphorus
B) Magnesium
C) Molybdenum
D) None of the above

i) Which of the following cell organelles is absent in animal cells and present in a plant cell? [1]

A) Cell wall
B) Cytoplasm
C) Vacuoles
D) Mitochondria

j) The process of cell respiration is carried out by _____ [1]

A) Mitochondria B) Chloroplast

C) Nucleus D) None of the above

k) Comment on Binomial nomenclature. [3]

l) Define types of blood groups [3]

m) Write structure of a neuron. [3]

n) What is autotrophic nutrition? [3]

o) Explain biological significance of on mitochondria. [3]

PART-B (50 Marks)

2.a) Write about salient features of Protista.

b) Write about morphological structure of leaf.

c) Write about general anatomy of stem. [4+3+3]

OR

3.a) Write about salient features of Anemalia.

b) Write about leaf of Dicotyledons.

c) Give a note on morphological Structure of Flower. [4+3+3]

4.a) Write about the composition of Lymph.

b) Explain the structure of Blood vessel.

c) Give a note on Digestive glands. [4+3+3]

OR

5.a) Write about mechanism of Blood Coagulation.

b) Explain the role of digestive enzymes.

c) Explain the exchange of gases in respiration. [4+3+3]

6.a) Write about Renin angiotensin system.

b) Give the general structure of Brain.

c) Write about Parts of male reproductive system. [4+3+3]

OR

7.a) Write about the classification of Nervous system.

b) What are endocrine glands? Explain.

c) Write about Oogenesis. [4+3+3]

8.a) Write about various photosynthetic Pigments.

b) What are Micronutrients?

c) Write about Nitrogen cycle with a diagram? [4+3+3]

OR

9.a) What are Macronutrients?

b) Explain Nitrogen Fixation with a diagram.

c) Write the general features of Photosynthesis. [3+4+3]

10.a) What is Aerobic Respiration.

b) Explain various stages of Meiosis.

c) Explain various Phases and rate of plant growth. [3+4+3]

OR

11.a) Write the structure of Chloroplast.

b) Explain Glycolysis.

c) Write about various types of Tissues in plants. [3+4+3]

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R22

Code No: 281AG

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Pharmacy I Year I Semester Examinations, September - 2024

REMEDIAL MATHEMATICS

Time : 3 hours **Max Marks: 75**

Note: The end semester examinations will be conducted for 75 marks consisting of two parts viz. i) **Part- A** for 25 marks, ii) **Part - B** for 50 marks.

- **Part-A** is compulsory question which consists of fifteen sub-questions. The first ten sub-questions are of Objective type/ Multiple Choice Questions, 2 from each unit and carry 1 mark each. The next five sub-questions are Short Answer Questions one from each unit and carry 3 marks each.
- **Part-B** consists of ten Long Answer Questions (numbered from 2 to 11) carrying 10 marks each. Each of these questions is from one unit and may contain sub-questions. For each question there will be an "either" "or" choice, which means that there will be two questions from each unit and the student should answer either of the two questions.

PART- A (25 Marks)

1.a) If ω is complex cube root of unity , then the value of $\begin{vmatrix} 1 & \omega \\ \omega & -\omega \end{vmatrix}$ is [1]

A) -1 B) $-\omega$ C) 1 D) ω

b) If $M = \begin{bmatrix} 4 & 1 \\ x & 2 \end{bmatrix}$, then the value of x for which $6M - M^2 = 5I$ is [1]

A) 2 B) 3 C) 1 D) -3

c) $4\log 5 + 2\log 4 =$ [1]

A) 4 B) 5 C) 2 D) 6

d) The domain of the function $\sqrt{\log_{\frac{1}{2}} x}$ is [1]

A) $(0.5, \infty)$ B) $(1, \infty)$ C) $(0,1)$ D) $(0.5,1)$

e) $\lim_{x \to 0} \frac{e^{\sin x} - 1}{x} =$ [1]

A) 0 B) 1 C) 2 D) ∞

f) $\frac{d}{dx}\left(3x^4 e^x + 5\right) =$ [1]

A) $x^3 e^x (x-4)$ B) $3x^3 e^x$ C) $x^3 e^x (x+4)$ D) $3x^3 e^x (x+4)$

g) $\int 3^x dx =$ [1]

A) $3^x + C$ B) $3^x \log_e 3 + C$ C) $\frac{3^x}{\log_e 3} + C$ D) $\frac{3^{x+1}}{x+1} + C$

h) $\int_0^2 \left(x^2 + x + 1\right) dx =$ [1]

A) $\frac{15}{2}$ B) $\frac{20}{5}$ C) $\frac{20}{3}$ D) $\frac{3}{20}$

i) The degree of the differential equation $(y''')^3+(y'')^5+(y')^4+(y)^2=0$ [1]

A) 5 B) 4 C) 3 D) 2

j) The number of arbitrary constants in the particular solution of a linear differential equation of third order is: [1]

A) 1 B) 3 C) 2 D) 0

k) Find the adjoint of the matrix $A=\begin{bmatrix}1 & 1 & 1\\ 1 & 2 & -3\\ 2 & -1 & 3\end{bmatrix}$. [3]

l) If $f(x)=e^{5x}$ and $g(x)=\log x$, then find $fog(x)$ and $gof(x)$. Are $fog(x)$ and $gof(x)$ equal? [3]

m) Find the derivative of $y=\dfrac{\sin x+\cos x}{\sin x-\cos x}$ with respect to x. [3]

n) Evaluate $\int \log(x+1)\,dx$. [3]

o) Solve the differential equation $\dfrac{dy}{dx}=\dfrac{x^2}{y^3}$. [3]

PART-B

(50 Marks)

2.a) Without expanding, using properties of determinants, show that $\begin{vmatrix}b^2c^2 & bc & b+c\\ c^2a^2 & ca & c+a\\ a^2b^2 & ab & a+b\end{vmatrix}=0$.

b) Solve the system of equations: $x+y+z=6,\ x-y+z=2,\ 2x+y-z=1$ using Gauss Elimination method. [4+6]

OR

3. If $A=\begin{bmatrix}2 & 1\\ 1 & 1\end{bmatrix}$ and $B=\begin{bmatrix}0 & 3\\ 1 & 2\end{bmatrix}$

Prove

a) $A-A'$ is Skew-symmetric *b)* $B+B'$ is symmetric

c) A^{-1} is not equal to $-A$ *d)* Both A and B are non-singular [3+2+3+2]

4.a) Show that $\log\dfrac{70}{33}+\log\dfrac{22}{135}-\log\dfrac{7}{18}=3\log 2-2\log 3$.

b) Solve $\log_{10}(2x-1)+\log_{10}(x)=1$. [5+5]

OR

5.a) Solve $a^{2x}=b^{x-c}c^{x+5}, a,b,c>0$ but $a\neq 1, b\neq 1, c\neq 1$.

b) Find the domain and range of the function $f(x)=-\sqrt{-5-6x-x^2}$. [4+6]

6.a) Compute $\lim_{x \to 1} \frac{\sin(x-1)}{(x^2-1)}$.

b) Evaluate $\frac{dy}{dx}$ when $ax^2 + 2hxy + by^2 + 2gx + 2fy = 0$. [5+5]

OR

7.a) Calculate $\lim_{x \to 0} \frac{a^x - b^x}{x}$

b) Differentiate $\frac{x^2 + e^x}{\log x + 20}$ w.r.t. x. [5+5]

8.a) Obtain the value of $\int_0^{\frac{\pi}{4}} \sin^3 x \cos^4 x \, dx$.

b) Find the area of the region bounded by the curve $x^2 = 4y$ and the straight line $x = 4y - 2$. [4+6]

OR

9. Evaluate $\int_1^2 \frac{dx}{(x+3)(x+4)}$. [10]

10.a) Define first order linear differential equation.

b) Solve the differential equation: $(1+x)\frac{dy}{dx} - y = e^{3x}(1+x)^2$. [2+8]

OR

11.a) Define homogenous differential equation.

b) Solve the differential equation $ydx - xdy = \sqrt{x^2 + y^2}\,dx$. [2+8]

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Code No: 282AA

R22

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Pharmacy I Year II Semester Examinations, April/May -2025
HUMAN ANATOMY AND PHYSIOLOGY - II

Time : 3 hours **Max Marks: 75**

Note: The end semester examinations will be conducted for 75 marks consisting of two parts viz. i) **Part- A** for 25 marks, ii) **Part - B** for 50 marks.

- **Part-A** is compulsory question which consists of fifteen sub-questions. The first ten sub-questions are of Objective type/ Multiple Choice Questions, 2 from each unit and carry 1 mark each. The next five sub-questions are Short Answer Questions one from each unit and carry 3 marks each.
- **Part-B** consists of ten Long Answer Questions (numbered from 2 to 11) carrying 10 marks each. Each of these questions is from one unit and may contain sub-questions. For each question there will be an "either" "or" choice, which means that there will be two questions from each unit and the student should answer either of the two questions.

PART- A (25 Marks)

1.a) What is the average lifespan of a red blood cell (RBC)? [1]
a) 20 days b) 60 days
c) 120 days d) 180 days

b) Hemopoiesis primarily occurs in which part of the body in adults? [1]
a) Liver b) Bone marrow
c) Spleen d) Kidney

c) What is the name of the valve located between the left atrium and left ventricle? [1]
a) Tricuspid valve b) Pulmonary valve
c) Mitral valve d) Aortic valve

d) Which vessel carries oxygenated blood from the lungs to the heart? [1]
a) Pulmonary artery b) Pulmonary vein
c) Aorta d) Superior vena cava

e) Which of the following cells in the stomach is responsible for acid production? [1]
a) Chief cells b) Parietal cells
c) G-cells d) Mucous cells

f) What is the primary function of bile secreted by the liver? [1]
a) Protein digestion b) Neutralization of gastric acid
c) Emulsification of fats d) Regulation of glucose

g) Which of the following represents the maximum amount of air a person can exhale after a maximum inhalation? [1]
a) Tidal Volume (TV) b) Inspiratory Reserve Volume (IRV)
c) Vital Capacity (VC) d) Residual Volume (RV)

h) Which of the following is the primary method of oxygen transport in blood? [1]
a) Dissolved in plasma b) Bound to hemoglobin
c) Converted to bicarbonate ions d) Attached to white blood cells

i) Which of the following structures is NOT part of the male reproductive system? [1]
a) Testes b) Seminal vesicle
c) Uterus d) Vas deferens

j) What is the site of fertilization in the female reproductive system? [1]

a) Ovary b) Uterus

c) Fallopian tube d) Cervix

k) Define the reticuloendothelial system and its primary function. [3]

l) How is the heart rate regulated by the autonomic nervous system? [3]

m) What is the role of the salivary glands in digestion? [3]

n) What are the key structures of the urinary system? [3]

o) Explain the role of estrogen in the female reproductive system. [3]

PART-B (50 Marks)

2. Explain the composition and functions of blood in detail. Discuss the circulation of lymph and its role in immune response and fluid balance. [10]

OR

3. Elaborate on the mechanisms of blood coagulation, including intrinsic and extrinsic pathways. Write a detailed note on anyone blood disorder. [10]

4. Describe the structure and functions of arteries, veins, and capillaries. What is cardiac output? Discuss the factors that affect cardiac output. [10]

OR

5. Discuss the regulation of blood pressure and the physiological mechanisms involved. Write a note on arrhythmias and heart failure. [10]

6. Explain the digestion and absorption of nutrients in the small intestine. Discuss the physiological processes involved in oxygen and carbon dioxide transport in the blood during respiration. [10]

OR

7. Describe the functions of the liver, pancreas, and salivary glands in digestion. Explain how respiration is regulated by the body. [10]

8. Discuss the various lung volumes and capacities, and their significance in assessing pulmonary function. Explain the Renin-Angiotensin System (RAS) in the regulation of kidney function. [10]

OR

9. Explain how kidneys help maintain fluid and electrolyte balance. What are common disorders of the kidney and their causes? What is the function of surfactant in the lungs? [10]

10. Discuss the process of fertilization. Discuss the process of parturition, describing the stages of labor and the mechanisms that trigger delivery. [10]

OR

11. Explain the anatomy and functions of the male and female reproductive systems. [10]

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Pharmacy I Year II Semester Examinations, September - 2024

HUMAN ANATOMY AND PHYSIOLOGY - II

Time : 3 hours **Max Marks: 75**

Note: The end semester examinations will be conducted for 75 marks consisting of two parts viz. i) **Part- A** for 25 marks, ii) **Part - B** for 50 marks.

- **Part-A** is compulsory question which consists of fifteen sub-questions. The first ten sub-questions are of Objective type/ Multiple Choice Questions, 2 from each unit and carry 1 mark each. The next five sub-questions are Short Answer Questions one from each unit and carry 3 marks each.
- **Part-B** consists of ten Long Answer Questions (numbered from 2 to 11) carrying 10 marks each. Each of these questions is from one unit and may contain sub-questions. For each question there will be an "either" "or" choice, which means that there will be two questions from each unit and the student should answer either of the two questions.

PART - A

(25 Marks)

1.a) Which blood type is considered the Universal donor ? [1]

A) A B) B

C) AB D) O

b) Which organ is not a part of the Lymphatic system? [1]

A) Spleen B) Liver

C) Thymus D) Tonsils

c) The Sinoatrial node is responsible for [1]

A) Pumping blood out of the heart

B) Transmitting electrical impulses to the ventricles

C) Initiating the heartbeat

D) Regulating blood pressure

d) The pulmonary artery carries which type of blood [1]

A) Oxygenated B) Deoxygenated

C) Nutrient-rich D) Waste -laden

e) Gas exchange in the lungs occurs in the [1]

A) Alveoli B) Bronchioles

C) Bronchi D) Trachea

f) The anatomical structure that separates the thoracic and abdominal cavities is called the [1]

A) Diaphragm B) pleura

C) Epiglottis D) Alveoli

g) The functional unit of the kidney responsible for urine formation is called [1]

A) Ureter B) Nephron

C) Renal pelvis D) Glomerulus

h) What is the purpose of Artificial Respiration? [1]

A) To increase blood pressure B) To provide oxygen to the lungs

C) To stimulate the micturition reflex D) To regulate body temperature

i) Parturition refers to [1]

A) Fertilization of the egg B)The process of labor and childbirth

C)Formation of the placenta D)Implantation of the embryo

j) Which of the following is NOT a disorder of the kidney? [1]

A) Glomerulonephritis B) Urinary tract infections

C) Cirrhosis D) Kidney stones

k) Write the Composition and Functions of Blood? [3]

l) Write a short note on Cardiac Output? [3]

m) Write any 2 disorders of GIT. [3]

n) Write a note on Resuscitation methods. [3]

o) Write the functions of Sex hormones. [3]

PART - B

(50 Marks)

2. Define Anemia? Write the types of Anemia. [10]

OR

3. Write in detail about formation of Hemoglobin and Blood grouping. [10]

4. Define pulse and Explain about the Regulation of blood pressure. [10]

OR

5. Discuss the events occur in Cardiac Cycle. [10]

6. Explain the Mechanism of Respiration and functions of respiratory system. [10]

OR

7. Explain the anatomy of Small intestine and Large intestine. [10]

8. Explain in detail about physiology of Urine formation. [10]

OR

9. Write a brief note on lung volumes and transport of respiratory gases. [10]

10. Describe the anatomy of Female reproductive system. [10]

OR

11. Explain in detail about Spermatogenesis. [10]

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Code No: 282AA

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Pharmacy I Year II Semester Examinations, March - 2024

HUMAN ANATOMY AND PHYSIOLOGY-II

Time : 3 hours **Max Marks: 75**

Note: The end semester examinations will be conducted for 75 marks consisting of two partsviz. i) **Part- A** for 25 marks, ii) **Part - B** for 50 marks.

- **Part-A** is compulsory question which consists of fifteen sub-questions. The first ten sub-questions are of Objective type/ Multiple Choice Questions, 2 from each unit and carry1 mark each. The next five sub-questions are Short Answer Questions one from each unit and carry 3 marks each.
- **Part-B** consists of ten Long Answer Questions (numbered from 2 to 11) carrying 10 marks each. Each of these questions is from one unit and may contain sub-questions. For each question there will be an "either" "or" choice, which means that there will be two questions from each unit and the student should answer either of the two questions.

PART - A

(25 Marks)

1.a) Fibrinogen is produced from [1]
A) Liver B) Lung C) Kidney D) Heart

b) Life span of RBC is [1]
A) 60 days B) 30 days C) 60 days D) 120 days

c) Major part of the heart wall layer is [1]
A) Epicardium B) Myocardium C) Endocardium D) Mesocardium

d) In ECG, P wave indicates [1]
A) Plateau B) Isoelectric
C) Ventricular repolarization D) Atrial depolarization

e) Windpipe refers to [1]
A) Bronchi B) Trachea C) Larynx D) Esophagus

f) Example for accessory digestive organs. [1]
A) Colon B) Liver C) Stomach D) Ileum

g) Normal glomerular filtration rate (GFR) is [1]
A) 125 ml/min B) 180 ml/min C) 200 ml/min D) 165 ml/min

h) The structure that connects a kidney to the urinary bladder is the [1]
A) Ureter B) Urethra C) Urinary pelvis D) Uterus

i) Which cell secretes testosterone? [1]
A) Sertoli cells B) Sustentacular cells C) Follicular cells D) Leydig cells

j) Example for stop codon [1]
A) UAU B) UGA C) UAC D) UGU

k) Write the Functions of lymphatic system. [3]

l) Explain the draw the structure of artery. [3]

m) Explain the role of pepsin in digestion. [3]

n) Write the functions of kidney. [3]

o) Give the flowchart for Oogenesis. [3]

PART - B

(50 Marks)

2. Define erythropoiesis. Explain the various stages of erythropoiesis with diagram. [10]

OR

3. Discuss the principle of ABO blood grouping. Add its significance in blood transfusion. [10]

4. Explain the anatomy of human heart with diagram and explain its physiology. [10]

OR

5. Define cardiac cycle. Discuss the different stages of cardiac cycle with diagram. [10]

6. Discuss the mechanism and regulation of acid production in stomach. [10]

OR

7. Draw the labelled diagram of respiratory system. Explain the physiology of respiration. [10]

8. Draw a labelled diagram of nephron. Discuss the physiology of urine formation. [10]

OR

9.a) Write Renin angiotensin aldosterone system.
b) Add a note on micturition reflex. [5+5]

10. Explain in detail about physiology of menstruation. [10]

OR

11. Discuss the steps involved in protein synthesis of cell with diagram. [10]

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Pharmacy I Year II Semester Examinations, April/May -2025
PHARMACEUTICAL ORGANIC CHEMISTRY –I

Time: 3 hours **Max Marks: 75**

Note: The end semester examinations will be conducted for 75 marks consisting of two parts viz. i) **Part- A** for 25 marks, ii) **Part - B** for 50 marks.

- **Part-A** is compulsory question which consists of fifteen sub-questions. The first ten sub-questions are of Objective type/ Multiple Choice Questions, 2 from each unit and carry 1 mark each. The next five sub-questions are Short Answer Questions one from each unit and carry 3 marks each.
- **Part-B** consists of ten Long Answer Questions (numbered from 2 to 11) carrying 10 marks each. Each of these questions is from one unit and contains sub-questions. There are two questions from each unit and the student should answer any one of the two questions.

PART- A

(25 Marks)

1.a) How many σ bonds are present in ethane molecule due to the overlap of sp^3- sp^3 hybrid orbitals? [1]

(A) One (B) Three
(C) Five (D) Six

b) Which one of the following is an unsaturated hydrocarbon? [1]

(A) Ethyl alcohol (B) Formaldehyde
(C) Hexane (D) Acetylene

c) What is the major product due to dehydrohalogenation of 2-bromobutane as per the Saytzeff Rule? [1]

(A) 1-butene (B) 1,2-butadiene
(C) 2-butene (D) Butanol

d) Which compound of the following is the product due to the dehydrohalogenation reaction of 1,2-dibromopropane? [1]

(A) Propyne (B) Propene
(C) Propane (D) Pentane

e) Which one is the correct order of reactivity of primary (1^0), secondary (2^0), and tertiary (3^0) alkyl halides towards S_N2 reactions? [1]

(A) $3^0 > 2^0 = 1^0$ (B) $3^0 < 2^0 < 1^0$
(C) $3^0 > 2^0 < 1^0$ (D) $3^0 > 2^0 > 1^0$

f) What is the product obtained by the reaction between Grignard reagent and formaldehyde? [1]

(A) Primary alcohols (B) Primary alcohols
(C) Tertiary alcohol (D) Alkene

g) What is the product of Stephens reduction of alkane-nitriles? [1]

(A) Alcohols (B) Ketones
(C) Carboxylic acids (D) Aldehydes

h) What is the name of the reaction that produces propane from acetone by using amalgamated zinc and hydrochloric acid as the reducing agent? [1]

(A) Wittig reaction (B) Cannizzaro's reaction
(C) Clemensen reduction (D) Benzoin condensation

i) Hydrolysis of which class of compounds of the following produces carboxylic acid and alcohol? [1]

(A) Esters (B) Nitriles
(C) Ketones (D) Alcohols

j) Ethylmethylamine belongs to which category of amine of the following? [1]

(A) Primary (B) Secondary
(C) Tertiary (D) Quaternary salts

k) Describe the characteristic features of Nucleophilic Addition Reactions giving an example. [3]

l) Explain the Kolbe's method for preparation of alkanes with an example. [3]

m) Enumerate the factors that affect S_N1 and S_N2 reactions. [3]

n) Explain the Wolff-Kishner reduction reaction giving an example. [3]

o) Discuss the basicity of amines and enumerate the associated factors. [3]

PART-B (50 Marks)

2.a) Define and explain the significance of the terms "Bond angle", and "Bond energy" giving example.

b) Name and explain the various types of structural isomerism citing example.

c) What are "Free radicals"? Explain the Free Radical mechanism of the chlorination of methane. [3+3+4]

OR

3.a) Define the terms "Inductive effect", and "Electromeric effect" giving example, and enumerate the differences between the two types of effects.

b) Describe a broad classification of organic compounds giving definition and example for each class of compounds.

c) Define and give example of "Elimination reaction". [4+4+2]

4.a) What is meant by the term " Catalytic hydrogenation"? Describe the catalytic hydrogenation of alkenes and alkynes for preparation of alkanes giving representative reactions as example.

b) Explain the Markownikoff's and Anti-Markownikoff's addition of hydrogen halide to alkenes with example.

c) Define "Allylic rearrangement" giving an example. [4+4+2]

OR

5.a) What is the order of reactivity of the halogens in the halogenation reaction of alkanes? Explain the mechanism of the chlorination of alkanes citing an example.

b) Explain the cis and Trans additions to alkenes giving example with necessary representative diagram.

c) Give one representative reaction for the following cases:
(i) Dehalogenation of tetrahalides for preparation of alkynes
(ii) Addition of bromine to alkynes. [4+2+4]

6.a) Describe two chemical reactions of alkyl halides and indicate the utility of these reactions.

b) Describe the preparation method of alcohols from (i) Ester (ii) Ketones showing the reactions involved.

c) What is meant by "Esterification"? Give a representative reaction of alcohol leading to ester formation. [4+4+2]

OR

7.a) Explain the reactions of alkyl halides in the synthesis of nitrite and nitro compounds showing the chemical reactions involved.

b) Reduction of carbonyl compounds with appropriate reducing agents give alcohol: Give one reaction each for aldehydes, ketones, carboxylic acids, and esters.

c) Name four commonly used reagents for the oxidation alcohols. [4+4+2]

8.a) Describe the preparation method of aldehydes from Nitriles giving an example and showing the chemical reaction involved.

b) Explain the mechanism of the Cannizzaro Reaction giving an example.

c) Describe the Fehling's test for aldehydes. [4+4+2]

OR

9.a) Describe the reactions of carbonyl compounds with hydrogen cyanide giving a representative reaction.

b) What is Benzoin? Explain the mechanism of Benzoin Condensation.

c) Describe the 2,4-dinitrophenylhydrazone test for carbonyl compounds. [4+4+2]

10.a) Describe two methods for preparation of aromatic carboxylic acids showing the Chemical reactions involved.

b) What is Gabriel's Phthalimide synthesis? Describe the method and mention the special features associated with this.

c) Describe a qualitative test for aliphatic amines. [4+4+2]

OR

11.a) Describe two reactions of aromatic carboxylic acids showing the chemical reactions involved and the product formed.

b) Discuss the basicity of amines and explain the reason of their basicity.

c) What is Carbylamine Test and what is its utility? [4+4+2]

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Pharmacy I Year II Semester Examinations, September - 2024
PHARMACEUTICAL ORGANIC CHEMISTRY –I

Time : 3 hours **Max Marks: 75**

Note: The end semester examinations will be conducted for 75 marks consisting of two parts viz. i) **Part-A** for 25 marks, ii) **Part - B** for 50 marks.

- **Part-A** is compulsory question which consists of fifteen sub-questions. The first ten sub-questions are of Objective type/ Multiple Choice Questions, 2 from each unit and carry 1 mark each. The next five sub-questions are Short Answer Questions one from each unit and carry 3 marks each.
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PART- A (25 Marks)

1.a) Which among the following is not an example of Heterocyclic compound [1]
A) Furan B) Pyrrole
C) Pyridine D) Naphthalene

b) IUPAC name of $(CH_3)_2$-CH-CH_2-CH-Cl [1]
A) 2-Methyl-4-chloro pentane B) 1-Chloro-3-methyl butane
C) 1-Chloro pentane D) 2-methyl-3-chloro propane

c) In the reaction of $CH_3CH_2CH{=}CH_2$ with HCl, the H of the HCl will become attached to which carbon [1]
A) C-1 B) C-2
C) C-3 D) C-4

d) In the chlorination of alkanes, the first step in which chlorine free radicals are produced is called [1]
A) Propagation B) Activation
C) Initiation D) Deactivation

e) Which compound reacts most rapidly by SN_2 MECHANISM? [1]
A) tert-butyl chloride B) Methyl chloride
C) Isopropyl chloride D) Ethyl chloride

f) Alkyl halide undergo [1]
A) Electrophilic substitution reaction B) Electrophilic addition reactions
C) Nucleophilic substitution reactions D) Nucleophilic addition reactions

g) When formaldehyde is treated with 50% NaOH solution, it undergoes [1]
A) Cannizzaro reaction B) Wurtz reaction
C) Aldol condensation D) Hydrolysis

h) The appearance of a silver mirror in Tollens test indicates the presence of [1]
A) A ketone B) An aldehyde
C) An alcohol D)An alkene

i) Which of the following compounds is most acidic? [1]
A) CH_3COOH B)CH_3CH_2COOH
C) CF_3COOH D) $ClCH_2COOH$

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Pharmacy I Year II Semester Examinations, March - 2024
PHARMACEUTICAL ORGANIC CHEMISTRY –I

Time : 3 hours **Max Marks: 75**

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PART- A

(25 Marks)

1.a) Which of the following does not come under the organic addition reaction? [1]
A) Halogenation B) Hydrohalogenation
C) Hydration D) Dehydration

b) Which among the following is not an aromatic compound [1]
A) Napthaline B) Aniline
C) Pyridine D) Tropolone

c) Diel's Alder reaction is [1]
A) Stereospecific B) Stereoselective
C) Polymerization reaction D) Both A&B

d) Reaction of halogen acid with conjugated diene is [1]
A) Nucleophilic addition reaction B) Substitution reaction
C) Electrophilic addition reaction D) Halogenation reaction

e) Ethanol and diethyl ether are best considered as [1]
A) Structural isomers B) Stereo isomers
C) Enantiomers D) Diastereomers

f) In wurtz reaction the reagent used is [1]
A) Na B) Liquid NH3Na
C) Ether dry Na D) Alcohol dry Na

g) With anhydrous zinc chloride, Ethylene glycol gives [1]
A) Formaldehyde B) Acetylene
C) Acetaldehyde D) Acetone

h) Aldehydes that do not have alpha hydrogen gives the following reaction [1]
A) Aldol condensation B) Cannizaro reaction
C) Perkin reaction D) All the above

i) Oxidation of Ethanol in the presence of hot alkaline KMno4 yields [1]
A) Ethane B) Ethanoic acid
C) Ethyne D) Ethene

j) Acetic acid is manufactured by the fermentation of which of the following reaction? [1]
A) Ethanol B) Methanol
C) Ethanal D) Metanal

k) Define tautomerism with example. [3]
l) Explain the Markownikoffs rule and its limitations. [3]
m) Write a note on nomenclature of alcohols. [3]
n) Describe any two methods of preparation of aldehydes. [3]
o) Write the qualitative test for aliphatic amines. [3]

PART- B (50 Marks)

2.a) Discuss the bond angle and bond energy. [5+5]
b) Write the IUPAC and common system of nomenclature of ethers.

OR

3.a) Write the structure, shape and reactivity of nucleophiles and electrophiles. [5+5]
b) Write a note on electrophilic addition reaction.

4.a) Write any two preparation methods of Alkanes. [5+5]
b) Discuss the stabilities of alkenes and explain the SP2 hybridization in alkenes.

OR

5.a) Explain the stability of conjugated dienes. [5+5]
b) Explain saytzeffs rule.

6. Explain the SN_1 and SN_2 reactions including the kinetics, order of reactivity of alkyl halides and the rearrangements of carbocations. [10]

OR

7. Describe the various methods of preparations and reactions of alkyl halides. [10]

8. Write a short note on [5+5]
a) Clemensen reduction
b) Wolff-kishner reduction.

OR

9 Write a short note on [5+5]
a) Aldol condensation
b) Wittig reaction.

10.a) Write a short note on acidity of carboxylic acid. Explain the effect of substituents on acidity of carboxylic acids. [5+5]
b) Describe any two reactions and qualitative test for carboxylic acid.

OR

11.a) Write a note on basicity of aliphatic amines. Explain the effects of substituents on basicity on aliphatic amines. [5+5]
b) Write any three reactions of quaternary ammonium salts.

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Code No: 282AC

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Pharmacy I Year II Semester Examinations, November - 2025
BIOCHEMISTRY

Time : 3 hours **Max Marks: 75**

Note: The end semester examinations will be conducted for 75 marks consisting of two parts viz. i) **Part- A** for 25 marks, ii) **Part - B** for 50 marks.

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PART- A

(25 Marks)

1.a) The role of insulin in carbohydrate metabolism [1]
A) it breaks down glucose into energy
B) It increases blood glucose level
C) it helps cells absorb glucose and lowers blood glucose level
D) It inhibits glycolysis

b) During glycolysis of glucose the energy liberated in the absence of oxygen is known as [1]
A) Anaerobic glycolysis
B) Aerobic glycolysis
C) Glyconeogenesis
D) Glycogenolysis

c) Where does β-oxidation takes place? [1]
A) mitochondria
B) cytoplam
C) cephalin
D) cerebroside

d) During protein synthesis, amino acids are linked by which type of bond [1]
A) Hydrogen bonds
B) Peptide bonds
C) Ionic bonds
D) Disulfide bonds

e) The number of ATP required for urea synthesis is [1]
A) 0
B) 1
C) 2
D) 3

f) The amino acid that does not participate in transamination [1]
A) lysine
B) glutamate
C) alaline
D) tryptophan

g) The primary function of tRNA during translation is [1]
A) carries amino acids to the ribosomes
B) Reads the codons of mRNA
C) forms part of the ribosome
D) Transcribes DNA to RNA

h) The conversion of IMP to AMP requires [1]
A) GTP
B) ATP
C) NADPH
D) Coenzyme A

i) Which of the following is a ligase enzyme? [1]
A) Glutamine synthetase
B) Triose phosphate isomerase
C) aldolase
D) hexokinase

j) Co-enzymes involved in oxidation-reduction reactions [1]
A) NAD+, FAD
B) ATP
C) AMP
D) ADP

k) Write the inhibitors of ETC. [3]
l) Explain Hyperbilirubinemia. [3]
m) Explain catabolism of phenylalanine. [3]
n) Explain transcription of RNA synthesis. [3]
o) Classify enzymes according to IUB and give examples. [3]

PART-B **(50 Marks)**

2.a) What is Glycolysis?
b) Explain the metabolic pathway and its energetics. [4+6]

OR

3.a) Define carbohydrate.
b) Explain Citric acid cycle- Pathway, energetic and significance. [4+6]

4. Describe the beta oxidation of fatty acids with energetics. [10]

OR

5.a) Write the energetic for palmitic acid oxidation.
b) Discuss the formation of ketone bodies. [5+5]

6.a) Elaborate on the biosynthesis of serotonin (5-HT) and its significance.
b) Summarize on the Catabolism of tyrosine. [5+5]

OR

7. Elaborate on transamination and deamination reactions with suitable examples. [10]

8.a) Describe the structure of DNA and RNA.
b) Explain genetic code. [7+3]

OR

9.a) Write a note on phenylketonuria.
b) Describe catabolism of purine nucleotides. [5+5]

10.a) Define enzyme and discuss the classification and factors affecting enzymes action.
b) Discuss the diagnostic applications of enzyme. [5+5]

OR

11. Elaborate on enzyme regulation and inhibition with examples. [10]

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Code No: 282AC

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Pharmacy I Year II Semester Examinations, April/May - 2025
BIOCHEMISTRY

Time : 3 hours **Max Marks: 75**

Note: The end semester examinations will be conducted for 75 marks consisting of two parts viz. i) **Part- A** for 25 marks, ii) **Part - B** for 50 marks.

- **Part-A** is compulsory question which consists of fifteen sub-questions. The first ten sub-questions are of Objective type/ Multiple Choice Questions, 2 from each unit and carry 1 mark each. The next five sub-questions are Short Answer Questions one from each unit and carry 3 marks each.
- **Part-B** consists of ten Long Answer Questions (numbered from 2 to 11) carrying 10 marks each. Each of these questions is from one unit and may contain sub-questions. For each question there will be an "either" "or" choice, which means that there will be two questions from each unit and the student should answer either of the two questions.

PART- A (25 Marks)

1.a) Glucose-6-phosphatase is absent or deficient in [1]
A) Von Gierke's disease B) Pompe's disease
C) Cori's disease D) McArdle's disease

b) Which of the following is not an enzyme involved in glycolysis [1]
A) Enolase B) Aldolase
C) Hexokinase D) Glucose oxidase

c) Which of the following is required as a reductant in fatty acid synthesis [1]
A) NADH B) NADPH
C) $FADH_2$ D) $FMNH_2$

d) One molecule of palmitic acid on total oxidation to CO_2 will yield molecules of ATP [1]
A) 129 B) 154
C) 83 D) 25

e) The enzyme carbamoyl phosphate synthetase requires [1]
A) Mg++ B) Ca++
C) Na+ D) K+

f) Deficiency of urea cycle enzymes results in to accumulation of citrulline argininosuccinate arginine in the liver resulting in increasing concentration of.....in the blood. [1]
A) Calcium B) Sodium
C) Ammonia D) Lipid

g) Pyrimidine biosynthesis begins with the formation from glutamine, ATP and CO_2, of [1]
A) Carbamoyl aspartate B) Orotate
C) Carbamoyl phosphate D) Dihydroorotate

h) Genetic information flows from [1]
A) DNA to DNA B) DNA to RNA
C) RNA to cellular proteins D) DNA to cellular proteins

i) A sigmoidal plot of substrate concentration ([S]) verses reaction velocity (V) may indicate. [1]
A) Michaelis-Menten kinetics B) Co-operative binding
C) Competitive inhibition D) Non-competitive inhibition

j) An allosteric enzyme is generally inhibited by
A) Initial substrate of the pathway
B) Substrate analogues
C) Product of the reaction catalysed by allosteric enzyme
D) Product of the pathway [1]

k) Define oxidative and substrate level phosphorylation. [3]

l) Briefly describe atherosclerosis [3]

m) What do you understand by the term deamination? Give example. [3]

n) Explain the structure and functions of t-RNA. [3]

o) Explain the competitive enzyme inhibition with examples. [3]

PART-B (50 Marks)

2.a) Define gluconeogenesis and explain the reactions involved and Significance.
b) Explain the electron transport chain. [5+5]

OR

3.a) Define and explain the reaction sequences of glycolysis and its energetics.
b) Write glycogen metabolism pathway. [5+5]

4.a) Enumerate the ketone bodies. Describe the formation and utilization of ketone bodies in the body.
b) Write short note on nonalcoholic fatty liver diseases. [5+5]

OR

5.a) Write a note on conversion of cholestrol into steroid hormone and their role?
b) Describe the β-Oxidation of palmitic acid along with the energetics. [5+5]

6.a) Explain the general reactions involved in the metabolism of amino acids.
b) Discuss the metabolic disorder phenyketonuria in detail. [5+5]

OR

7.a) Discuss in detail about urea cycle. Also give the significance of urea cycle.
b) Write down the biosynthesis and biological significance of Dopamine, Noradrenaline and Adrenaline. [5+5]

8.a) Explain the biosynthesis of pyrimidine nucleotides in the body.
b) Give the salient features of Genetic code. [5+5]

OR

9.a) What are DNA replication? Explain the process of transcription in details.
b) Write short note on metabolic basis of Gout disease. [5+5]

10.a) Explain Michaelis-Menton plot of enzyme kinetics.
b) What is isoenzyme? Discuss its diagnostic applications. [5+5]

OR

11.a) What are enzymes? Describe various processes of inhibition of enzymes activity.
b) Describe Coenzyme with its structure and biological function? [5+5]

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Code No: 282AC

R22

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Pharmacy I Year II Semester Examinations, September - 2024
BIOCHEMISTRY

Time : 3 hours **Max Marks: 75**

Note: The end semester examinations will be conducted for 75 marks consisting of two parts viz. i) **Part- A** for 25 marks, ii) **Part - B** for 50 marks.

- **Part-A** is compulsory question which consists of fifteen sub-questions. The first ten sub-questions are of Objective type/ Multiple Choice Questions, 2 from each unit and carry 1 mark each. The next five sub-questions are Short Answer Questions one from each unit and carry 3 marks each.
- **Part-B** consists of ten Long Answer Questions (numbered from 2 to 11) carrying 10 marks each. Each of these questions is from one unit and may contain sub-questions. For each question there will be an "either" "or" choice, which means that there will be two questions from each unit and the student should answer either of the two questions.

PART - A

(25 Marks)

1.a) Which hormone is primarily responsible for lowering blood glucose levels? [1]
A) Insulin B) Glucagon
C) Cortisol D) Epinephrine

b) What is the final electron acceptor in the electron transport chain (ETC)? [1]
A) Oxygen B) NAD+
C) FADH2 D) Cytochrome c

c) In which metabolic pathway is glycogen synthesized? [1]
A) Glycolysis B) Gluconeogenesis
C) Glycogenesis D) Glycogenolysis

d) Which disorder is characterized by the accumulation of uric acid crystals in joints and tissues? [1]
A) Gout B) Hypercholesterolemia
C) Fatty liver D) Obesity

e) Which amino acid is involved in the urea cycle to remove ammonia from the body? [1]
A) Alanine B) Glutamine
C) Arginine D) Serine

f) Which biochemical substance is synthesized from heme breakdown in the body? [1]
A) Bilirubin B) Melatonin
C) Dopamine D) Serotonin

g) Which enzyme is responsible for catalyzing the synthesis of RNA from DNA template? [1]
A) DNA polymerase B) RNA polymerase
C) Helicase D) Ligase

h) Which genetic disorder results from a defect in hemoglobin synthesis? [1]
A) Sickle cell anemia B) Cystic fibrosis
C) Huntington's disease D) Duchenne muscular dystrophy

i) Which enzyme inhibition mechanism involves binding to the enzyme-substrate complex? [1]
A) Competitive inhibition B) Non-competitive inhibition
C) Uncompetitive inhibition D) Mixed inhibition

[1]

j) Which vitamin is a coenzyme in carboxylation reactions? [3]
A) Vitamin A B) Vitamin B12
C) Vitamin C D) Biotin

k) Describe oxidative phosphorylation? [3]

l) Define obesity and explain its metabolic implications. [3]

m) What is transamination, and which coenzyme is commonly involved in this process? [3]

n) Describe the structure of DNA and its function. [3]

o) Explain the IUB classification of enzymes.

PART - B (50 Marks)

2.a) Discuss the pathway of the citric acid cycle. [5+5]
b) Discuss the energetics of the citric acid cycle.

OR

3.a) Explain the mechanism of the Electron Transport Chain (ETC) and its importance in ATP production. [5+5]
b) Explain the pathways involved in glycogen metabolism (glycogenesis).

4.a) What is ketoacidosis, and how does it occur? [5+5]
b) Describe the role of cholesterol in the synthesis of vitamin D.

OR

5.a) What is hypercholesterolemia, and what are its potential health impacts? [5+5]
b) What are the steps involved in the development of atherosclerosis.

6.a) Describe decarboxylation in the context of amino acid metabolism. [5+5]
b) Describe the synthesis and significance of melatonin.

OR

7.a) What are the causes and consequences of hyperbilirubinemia? [5+5]
b) Explain the synthesis pathway of adrenaline from tyrosine.

8.a) Describe the biosynthesis pathway of pyrimidine nucleotides. [5+5]
b) How is the genetic code used to translate mRNA into a protein?

OR

9.a) Describe the process of translation in protein synthesis. [5+5]
b) What are the key steps involved in DNA replication?

10.a) What information can be derived from a Lineweaver-Burk plot? [5+5]
b) Explain the nomenclature system used for enzymes.

OR

11.a) What is enzyme inhibition? Discuss competitive and non-competitive inhibition with examples. [5+5]
b) How are enzymes regulated? Explain enzyme induction and repression.

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Code No: 282AC **R22**

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Pharmacy I Year II Semester Examinations, March - 2024

BIOCHEMISTRY

Time : 3 hours **Max Marks: 75**

Note: The end semester examinations will be conducted for 75 marks consisting of two parts viz. i) **Part- A** for 25 marks, ii) **Part - B** for 50 marks.

- **Part-A** is compulsory question which consists of fifteen sub-questions. The first ten sub-questions are of Objective type/ Multiple Choice Questions, 2 from each unit and carry 1 mark each. The next five sub-questions are Short Answer Questions one from each unit and carry 3 marks each.
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PART- A

(25 Marks)

1.a) The major source of energy for the living cells are [1]
A) Carbohydrates B) Lipids
C) Proteins D) Nucleotides

b) Which one of the following is NOT a precursor for gluconeogenesis? [1]
A) Lactate B) Glycerol
C) Alanine D) Acetic acid

c) The class of lipoproteins that is beneficial to atherosclerosis is … [1]
A) Low density of lipoproteins B) very low-density lipoproteins
C) High density lipoproteins D) Chylomicrons

d) The fatty acids in the body are mostly oxidized by [1]
A) α- oxidation B) ω- oxidation
C) β-oxidation D) γ- oxidation

e) A nucleoside is composed of: [1]
A) Nitrogen Base and Phosphoric acid
B) Nitrogen Base and pentose sugar
C) Nitrogen Base, pentose sugar and Phosphoric acid
D) Phosphoric acid and pentose sugar

f) One of the following is the heterocatalytic functions of DNA. [1]
A) Synthesis of DNA B) Synthesis of RNA and proteins
C) Synthesis of nucleosides D) Synthesis of nucleotides

g) Adenosine Triphosphate is not utilized in one of the following cellular functions. [1]
A) Muscle contraction B) Active transport
C) Catabolism D) Synthesis of cyclic AMP

h) Which of the following chemical is known to affect ATP formation in electron transport chain? [1]
A) Cyanide B) Malonate
C) 2,4 dinitrophenol D) Rotenone

i) The term enzymes are coined by: [1]
A) Louis Pasteur B) Eduard Buchner
C) Urey Miller D) Wilhelm Friedrich Kuhne.

j) Enzymes have slightly different molecular structure but performing identical activity are. [1]

A) Allosteric enzymes B) Apoenzymes
C) Holoenzymes D) Isoenzymes

k) Explain Glycogen storage diseases. [3]
l) Write Atherosclerosis. [3]
m) What is Gout disease? [3]
n) Write the biological role of nucleic acids and proteins. [3]
o) Explain Line Weaver Burke plot. [3]

PART-B (50 Marks)

2.a) Describe the pathway, energetics, and significance Citric acid cycle.
b) Write Glucose-6-Phosphate Dehydrogenase (G6PD) deficiency. [5+5]

OR

3.a) Explain the steps involved in gluconeogenesis.
b) Write Electron Transport Chain (ETC) and its mechanism. [5+5]

4.a) Describe the catabolism of phenylalanine and their metabolic disorders.
b) Explain the De novo synthesis of fatty acids. [5+5]

OR

5.a) What are essential fatty acids? Explain the disorders of lipid metabolism.
b) Write Synthesis and significance of 5-HT and melatonin. [5+5]

6.a) Discuss the catabolism of purine nucleotides.
b) Write structure of DNA and their functions. [5+5]

OR

7.a) Write the structure of RNA and their functions.
b) Explain the biosynthesis of purine. [5+5]

8.a) Define and classify carbohydrates with examples. Explain their biological functions.
b) Explain any one liver function test along with its significance. [5+5]

OR

9.a) Structural feature and biological role of RNA.
b) Explain the formation and utilization of ketone bodies. [5+5]

10.a) Explain the principle and applications of radio immune assay.
b) Explain the types of reversible enzyme inhibitors with examples. [5+5]

OR

11.a) Define enzymes. Write the IUB classification of enzymes with examples.
b) Explain the components of electron transport chain. [5+5]

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Code No: 282AD

R22

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Pharmacy I Year II Semester Examinations, November - 2025

PATHOPHYSIOLOGY

Time : 3 hours **Max Marks: 75**

Note: The end semester examinations will be conducted for 75 marks consisting of two parts viz. i) **Part- A** for 25 marks, ii) **Part - B** for 50 marks.

- **Part-A** is compulsory question which consists of fifteen sub-questions. The first ten sub-questions are of Objective type/ Multiple Choice Questions, 2 from each unit and carry 1 mark each. The next five sub-questions are Short Answer Questions one from each unit and carry 3 marks each.
- **Part-B** consists of ten Long Answer Questions (numbered from 2 to 11) carrying 10 marks each. Each of these questions is from one unit and may contain sub-questions. For each question there will be an "either" "or" choice, which means that there will be two questions from each unit and the student should answer either of the two questions.

PART- A (25 Marks)

1.a) The major mechanism of damage to the plasma membrane in ischemia is: [1]
A) Reduced intracellular pH
B) Increased intracellular accumulation of sodium
C) Increased Ca++ ions in the cytosol
D) Reduced aerobic respiration

b) Apoptosis has the following features except: [1]
A) There is cell shrinkage in apoptosis
B) There are no acute inflammatory cells surrounding apoptosis
C) There may be single cell loss or affect clusters of cells
D) Apoptosis is seen in pathologic processes only

c) Which of the following is NOT a cause of chronic renal failure? [1]
A) Diabetes
B) Hypertension
C) Nephrotic syndrome
D) Appendicitis

d) In systolic heart failure, what effect does angiotensin II have on stroke volume? [1]
A) Increases preload and decreases afterload
B) Increases preload and increases afterload
C) Decreases preload and increases afterload
D) Decreases preload and decreases afterload

e) Which clinical finding occurs first in metabolic acidosis of the patient with type 1 diabetes mellitus? [1]
A) Ketones in the urine
B) Palpitations, anxiety, and confusion
C) Hyperlipidemia
D) Kussmaul respirations

f) Gastric acid secretion is decreased by: [1]
A) Vagal inhibition
B) Luminal peptides and amino acids (OR: "Ingestion of protein")
C) Noradrenaline
D) Distension of bowel wall.

g) What kind of tumors lack a capsule and are not demercated? [1]
A) Hypertrophic
B) Malignant
C) Hypotrophic
D) Benign

h) The major hepatotoxic effect of ethanol is exerted by: [1]

A) Direct hepatotoxicity of ethanol B) Free radical injury

C) Hepatotoxicity of acetaldehyde D) Immunologic mechanisms

i) Which one of the following is a cause for antibiotics to develop antibiotic resistance? [1]

A) overuse of antibiotics B) new antibodies

C) homeopathic remedies D) lack of sterile conditions

j) Causative Agent of Gonnorrhoea [1]

A) Nelsseria Gonococcus B) Trichomonas vaginalis

C) Nesisseria Gonorrhoea D) Treponema Palladium

k) Write the clinical signs of acute inflammation. [3]

l) Write the types and symptoms of angina. [3]

m) Write the symptoms of iron deficiency anemia. [3]

n) Describe the classification of cancer. [3]

o) Mention the modes of transmission and prevention of AIDS. [3]

PART-B (50 Marks)

2. Explain about the causes and pathogenesis of cell injury. [10]

OR

3. Define Inflammation. Explain in detail the process of Inflammation. [10]

4.a) List out and describe Ischemic Heart Diseases.

b) Discuss the pathogenesis of Atherosclerosis. [5+5]

OR

5.a) Describe the Pathogenesis of Chronic Bronchitis.

b) Explain the complications of Chronic renal failure. [5+5]

6.a) Discuss about etiology and pathogenesis of diabetes mellitus.

b) Write about inflammatory bowel diseases. [5+5]

OR

7.a) Elaborate on the etiopathogenesis of megaloblastic anemia.

b) Discuss the Clinical features and pathogenesis of depression. [5+5]

8.a) Enumerate on the Pathogenesis of Cancer.

b) Discuss the Pathogenesis of jaundice. [5+5]

OR

9.a) Describe the Pathogenesis and symptoms of Rheumatoid arthritis.

b) Discuss briefly on Osteoporosis. [5+5]

10.a) Write a note on the Etiology of various types of viral hepatitis.

b) Write a note on the etiopathogenesis of TB. [5+5]

OR

11.a) Write about various stages of urinary tract infection.

b) Define meningitis and write about different types of meningitis. [5+5]

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Code No: 282AD

R22

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Pharmacy I Year II Semester Examinations, April/May -2025
PATHOPHYSIOLOGY

Time: 3 hours **Max Marks: 75**

Note: The end semester examinations will be conducted for 75 marks consisting of two parts viz. i) **Part- A** for 25 marks, ii) **Part - B** for 50 marks.

- **Part-A** is compulsory question which consists of fifteen sub-questions. The first ten sub-questions are of Objective type/ Multiple Choice Questions, 2 from each unit and carry 1 mark each. The next five sub-questions are Short Answer Questions one from each unit and carry 3 marks each.
- **Part-B** consists of ten Long Answer Questions (numbered from 2 to 11) carrying 10 marks each. Each of these questions is from one unit and may contain sub-questions. For each question there will be an "either" "or" choice, which means that there will be two questions from each unit and the student should answer either of the two questions.

PART- A **(25 Marks)**

1.a) Which process describes a decrease in cell size? [1]
A) Hypertrophy B) Atrophy
C) Hyperplasia D) Dysplasia

b) Which term refers to abnormal calcium deposition in tissues? [1]
A) Hyperplasia B) Calcification
C) Dysplasia D) Metaplasia

c) What is the normal blood pressure range in adults? [1]
A) 80/50 mmHg B) 120/80 mmHg
C) 140/90 mmHg D) 160/100 mmHg

d) What is the primary cause of Chronic Obstructive Pulmonary Disease (COPD)? [1]
A) Smoking B) Hypertension
C) High cholesterol D) Sedentary lifestyle

e) Which deficiency causes megaloblastic anemia? [1]
A) Vitamin D B) Vitamin B12
C) Calcium D) Zinc

f) Which bacteria commonly causes peptic ulcers? [1]
A) Streptococcus pneumoniae B) Escherichia coli
C) Helicobacter pylori D) Staphylococcus aureus

g) Which condition is a type of Inflammatory Bowel Disease (IBD)? [1]
A) Hepatitis B B) Crohn's disease
C) Osteoporosis D) Gout

h) What is the primary cause of alcoholic liver disease? [1]
A) Viral infection B) Excessive alcohol consumption
C) Autoimmune disorders D) Genetic mutation

i) Which symptom is common in Urinary Tract Infections (UTIs)? [1]
A) Joint pain B) Burning sensation during urination
C) Skin rash D) Swollen lymph nodes

j) What is the causative agent of COVID-19? [1]
A) SARS-CoV B) SARS-CoV-2
C) MERS-CoV D) Influenza virus

k) Describe the clinical signs of inflammation with their physiological basis. [3]

l) Explain the progression of atherosclerosis and how it leads to myocardial infarction. [3]

m) Differentiate between Type 1 and Type 2 diabetes based on etiology and symptoms. [3]

n) Compare and contrast rheumatoid arthritis and osteoarthritis in terms of etiology and symptoms. [3]

o) Explain the progression of HIV infection to AIDS and its impact on immunity. [3]

PART - B (50 Marks)

2.a) Explain the morphology and adaptive changes in cells during injury.

b) Analyze the pathophysiological changes in atherosclerosis and its link to inflammation. [5+5]

OR

3.a) Propose strategies to address electrolyte imbalances and their impact on cellular function.

b) Describe the mechanisms of cell membrane and mitochondrial damage during cell injury. [5+5]

4.a) Outline the causes, symptoms, and management strategies for acute renal failure.

b) Describe the physiological changes in the cardiovascular system during hypertension. [5+5]

OR

5.a) Illustrate the relationship between arteriosclerosis and hypertension in cardiovascular complications.

b) Explain how chronic obstructive pulmonary disease affects gas exchange in the lungs. [5+5]

6.a) Discuss the differences between hereditary and acquired anemia with examples.

b) Describe the symptoms and pathophysiological changes seen in Alzheimer's disease. [5+5]

OR

7.a) Explain how Vitamin B12 deficiency affects red blood cell production in megaloblastic anemia.

b) Explain the pathophysiology of stroke and its common causes. [5+5]

8.a) Explain the mechanisms leading to jaundice and its different types.

b) Analyze the role of uric acid metabolism in the pathogenesis of gout. [5+5]

OR

9.a) Discuss the stages of alcoholic liver disease, including fatty liver and cirrhosis.

b) Evaluate the impact of osteoporosis on bone health and fracture risk. [5+5]

10.a) Discuss the impact of SARS-CoV-2 on the respiratory system and overall health.

b) Explain the pathophysiology and complications of measles infection. [5+5]

OR

11.a) Describe the role of Mycobacterium leprae in leprosy and its clinical manifestations.

b) Analyze the causative organism, stages, and symptoms of syphilis. [5+5]

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Code No: 282AD

R22

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Pharmacy I Year II Semester Examinations, September - 2024
PATHOPHYSIOLOGY

Time : 3 hours **Max Marks: 75**

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PART- A (25 Marks)

1.a) Which organelle is primarily responsible for energy production and is often damaged during cellular injury? [1]
A) Golgi apparatus B) Endoplasmic reticulum
C) Mitochondria D) Lysosomes

b) Metaplasia refers to: [1]
A) Increase in cell size B) Change in cell type
C) Decrease in cell number D) Loss of cell function.

c) Which of the following is NOT a characteristic feature of asthma? [1]
A) Wheezing B) Dyspnea
C) Bradypnea D) Chest tightness

d) What is the primary cause of congestive heart failure? [1]
A) High blood pressure B) Coronary artery disease
C) Diabetes mellitus D) Obesity

e) Which disorder affects the thyroid gland, leading to symptoms such as weight gain, fatigue, and cold intolerance? [1]
A) Diabetes mellitus B) Parkinson's disease
C) Thyroid diseases D) Hemophilia

f) What is the primary cause of peptic ulcers? [1]
A) Excessive alcohol consumption B) Helicobacter pylori infection
C) High-fat diet D) Stress

g) Which hepatitis virus is primarily transmitted through contaminated food and water? [1]
A) Hepatitis A B) Hepatitis B
C) Hepatitis C D) Hepatitis D

h) What is the main characteristic feature of rheumatoid arthritis? [1]
A) Joint stiffness in the morning B) Joint deformity
C) Bone spurs D) Decreased bone density

i) Which virus is responsible for causing SARS, including COVID-19? [1]
A) Influenza virus B) Human Papilloma Virus (HPV)
C) Coronaviridae D) Herpes Simplex Virus (HSV)

j) What is the primary mode of transmission for gonorrhea? [1]
A) Airborne B) Sexual contact
C) Vector-borne D) Waterborne

k) Define homeostasis and write the importance in cellular function. [3]

l) Write the types, symptoms and clinical manifestations of Angina. [3]

m) Discuss the mechanism of clotting factor deficiencies in hemophilia. [3]

n) Explain the immune-mediated mechanisms in rheumatoid arthritis. [3]

o) Describe the microbial agents and transmission routes in meningitis. [3]

(50 Marks)

PART-B

2.a) Describe the main causes of cellular injury.
b) Describe the mechanisms of acidosis and alkalosis in cellular injury. [5+5]

OR

3.a) Explain the detailed Pathophysiology of Atherosclerosis.
b) Write the basic principles of wound healing in the skin. [5+5]

4.a) Explain the pathophysiology of asthma and its common triggers.
b) Discuss the risk factors and prevention strategies for Arteriosclerosis. [5+5]

OR

5.a) Discuss the diagnostic criteria and laboratory tests used to assess renal function in both acute and chronic renal failure.
b) Explain the pathophysiology of hypertension, highlighting the role of vasoconstriction, sodium retention, and Renin-Angiotensin-Aldosterone System (RAAS) activation. [5+5]

6.a) Discuss the genetic basis and clinical manifestations of sickle cell anemia.
b) Describe the clinical features and management of hypothyroidism. [5+5]

OR

7.a) What are the types and symptoms of epilepsy, and how is it managed?
b) Explain the etiology, symptoms, and treatment strategies for peptic ulcer disease. [5+5]

8.a) What are the clinical features and treatment options for ulcerative colitis?
b) Explain the types, transmission routes, and clinical manifestations of hepatitis B. [5+5]

OR

9.a) Describe the symptoms, diagnostic methods, and treatment strategies for rheumatoid arthritis.
b) Discuss the pathophysiology, symptoms, and treatment of gout. [5+5]

10.a) What are the causes, symptoms, and diagnostic tests for typhoid fever?
b) Explain the modes of transmission, symptoms, and preventive measures for tuberculosis. [5+5]

OR

11.a) Explain the etiology, clinical features, and management of AIDS.
b) Describe the symptoms, diagnosis, and treatment of urinary tract infections. [5+5]

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Code No: 282AD

R22

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Pharmacy I Year II Semester Examinations, March - 2024
PATHOPHYSIOLOGY

Time : 3 hours **Max Marks: 75**

Note: The end semester examinations will be conducted for 75 marks consisting of two parts viz. i) **Part- A** for 25 marks, ii) **Part - B** for 50 marks.

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PART- A

(25 Marks)

1.a) Increase in the number of cells known as [1]
A) Hypertrophy B) Hyperplasia C) Metaplasia. D) None

b) This is not the clinical sign of inflammation [1]
A) rubor B) calor C) dollar D) Functio laesa

c) Extrinsic Asthma occurs due to [1]
A) Pollen B) Dust C) Feather D) All

d) Oliguria is [1]
A) Decreased urine output B) No urine
C) Painful urination D) Decreased urine output and No urine

e) Hemophillia is due to deficiency of factor [1]
A) Three B) Five C) Six D) Eight

f) Epilepsy is due to [1]
A) Intermittent firing of neurons. B) Asynchronous firing of neurons
C) Synchronous firing of neurons. D) Absence of firing of Neurons

g) Which of the following statements best suits for Rheumatoid arthritis [1]
A) Acute disease. B) Chronic inflammatory autoimmune disease
C) Loss of sensations of body D) None

h) Steatoic liver is [1]
A) Excess infection of liver
B) Excess inflammation of liver
C) Excess accumulation of fat in the liver
D) None

i) This is not a sexually transmitted disease [1]
A) Syphilis. B) Gonorrhea. C) AIDS. D) UTI

j) This is a viral disease
A) Typhoid. B) TB C) Leprosy D) Measles

k) Explain the factors that influence the healing of wounds. [3]
l) Define ischemic heart disease? Explain its etiopathogenesis? [3]
m) Differentiate between hypo and hyperthyroidism with examples? [3]
n) Explain the pathophysiology of rheumatoid arthritis? [3]
o) Describe about the pathophysiology of syphilis? [3]

PART-B (50 Marks)

2.a) Describe about necrotic cell death. [5+5]
b) Explain about the pathogenesis of acute inflammation.

OR

3.a) Define Cell injury. Explain the pathogenesis of cell injury. [5+5]
b) Discuss the pathophysiology of atherosclerosis.

4.a) Discuss the pathogenesis of Asthma. [5+5]
b) Explain the pathophysiology of Hypertension.

OR

5.a) Discuss the pathophysiology of Chronic obstructive airway diseases? [5+5]
b) Write Pathophysiology of chronic renal failure?

6.a) Write a note on Schizophrenia? [5+5]
b) Give the Etiology of diabetes. Discuss the diabetic related complications?

OR

7.a) Describe the pathogenesis of Parkinsonism? [5+5]
b) Define peptic ulcer? Describe about etiology and pathogenesis of peptic ulcer?

8.a) What is Hepatitis? Discuss in detail the different types of hepatitis? [5+5]
b) What is metastasis? List out the differences of benign and malignant tumours?

OR

9.a) Enumerate on stages and pathogenesis of alcoholic Liver diseases. [5+5]
b) Explain pathophysiology of gout?

10.a) Write pathogenesis of HIV infection? [5+5]
b) Discuss the cause, mode of spread and pathogenesis of Tuberculosis?

OR

11.a) Write about Urinary Tract Infections? [5+5]
b) Explain the etiology and pathogenesis of COVID 19?

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Code No: 282AE

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

R22

B. Pharmacy I Year II Semester Examinations, November - 2025

COMPUTER APPLICATIONS IN PHARMACY

Time : 3 hours **Max Marks: 75**

Note: The end semester examinations will be conducted for 75 marks consisting of two parts viz. i) **Part- A** for 25 marks, ii) **Part - B** for 50 marks.

- **Part-A** is compulsory question which consists of fifteen sub-questions. The first ten sub-questions are of Objective type/ Multiple Choice Questions, 2 from each unit and carry 1 mark each. The next five sub-questions are Short Answer Questions one from each unit and carry 3 marks each.
- **Part-B** consists of ten Long Answer Questions (numbered from 2 to 11) carrying 10 marks each. Each of these questions is from one unit and may contain sub-questions. For each question there will be an "either" "or" choice, which means that there will be two questions from each unit and the student should answer either of the two questions.

PART- A

(25 Marks)

1.a) The symbols used in the hexadecimal system are: [1]
A) 0–9 only B) 0–7
C) 0–9 and A–F D) 0–15

b) The base of the octal number system is [1]
A) 2 B) 8
C) 10 D) 16

c) Microsoft Access is a _____. [1]
A) Word processing software B) Spreadsheet software
C) Database management system D) Presentation software

d) XML is mainly used to _____. [1]
A) Display data b) Store and transport data
C) Format web pages d) Design graphics

e) The main function of a web server is to _____. [1]
A) Store and manage web content B) Compile computer programs
C) Edit graphics and videos D) Create operating system

f) Which protocol is primarily used by web servers to serve web pages? [1]
A) FTP B) HTTP
C) SMTP D) POP3

g) What is Bioinformatics? [1]
A) Study of plants and animals
B) Application of computers to manage and analyze biological data
C) Study of biological evolution
D) Study of cells and tissues

h) Which of the following is a major application of Bioinformatics? [1]
A) Movie editing B) Genome analysis and protein modeling
C) Weather forecasting D) Traffic control

i) Which of the following is NOT a feature of CDS? [1]
A) Data acquisition B) Peak integration
C) Querying databases D) Video editing

j) Which system would you use to manage lab data and automate workflows? [1]

A) CDS B) LIMS

C) TIMS D) Both LIMS and TIMS

k) Explain about binary addition and binary subtraction. [3]

l) Write down the difference between XML and HTML? [3]

m) Write down the benefits of E – prescribing. [3]

n) Write down the objectives of Bioinformatics. [3]

o) What is LIMS in Pharmacy? [3]

PART-B (50 Marks)

2.a) How will you convert binary number system into decimal number system and vice versa? Give example.

b) Briefly explain process life cycle of a software. [4+6]

OR

3.a) With example, illustrate binary multiplication.

b) Give an explanation of the number system. Write a note about number systems for positions. [4+6]

4.a) Explain various types of programming languages.

b) What information does a drug database contain? Explain in detail pharmacy database. [5+5]

OR

5.a) Compare and contrast HTML and CSS in terms of function, Discuss how they work together to build dynamic web pages.

b) Discuss the role of programming languages in web technologies. [5+5]

6.a) Write down the detail stages of Drug Development.

b) What are the use of computers in hospital pharmacy? [5+5]

OR

7.a) Describe how lab diagnostic system use computer technologies to automated and improve medical testing.

b) Discuss the impact of computerized pharmaceutical information systems on hospital. [5+5]

8.a) Write down the impact of Bioinformatics in Vaccine Discovery.

b) Describe the role of databases in bioinformatics. [5+5]

OR

9.a) Write a short note on Discovery of vaccines in bioinformatics.

b) Discuss classification of biological databases in detail. [5+5]

10.a) How TIMS Supports Preclinical Data Management?

b) Describe the components of LIMS. [5+5]

OR

11.a) Why do we need a laboratory information management system?

b) Why is Chromatographic Data Analysis (CDS) important in pharmaceutical analysis? [5+5]

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Code No: 282AE

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD **R22**

B. Pharmacy I Year II Semester Examinations, April/May - 2025

Time : 3 hours **COMPUTER APPLICATIONS IN PHARMACY** **Max Marks: 75**

Note: The end semester examinations will be conducted for 75 marks consisting of two parts viz. i) **Part- A** for 25 marks, ii) **Part - B** for 50 marks.

- **Part-A** is compulsory question which consists of fifteen sub-questions. The first ten sub-questions are of Objective type/ Multiple Choice Questions, 2 from each unit and carry 1 mark each. The next five sub-questions are Short Answer Questions one from each unit and carry 3 marks each.
- **Part-B** consists of ten Long Answer Questions (numbered from 2 to 11) carrying 10 marks each. Each of these questions is from one unit and may contain sub-questions. For each question there will be an "either" "or" choice, which means that there will be two questions from each unit and the student should answer either of the two questions.

PART- A (25 Marks)

1.a) $101101_{(2)}$ = [1]
A) 11 B) 21
C) 31 D) None

b) DFD is [1]
A) Data function diagram B) Data fusion diagram
C) Data flow diagram D) None

c) HTML is a [1]
A) English language B) Programming language
C) Scripting Language D) All

d) Which of the following is not a scripting language [1]
A) HTML B) XML
C) C Language D) PHP

e) _____ technology in hospitals helps in automated dispensing of drugs and improves medication safety. [1]

f) EP Stands for [1]
A) Electronic prescribing B) Electronic payment
C) Electronic photography D) None

g) Bio informatics combines biology with [1]
A) Pharmacy B) Chemistry
C) Pharmacology D) Medical science

h) Genomic data base refers to [1]
A) Metabolic activity B) Protein information
C) DNA information D) Gene information

i) TIMS stands for [1]
A) Telephone Information Management System
B) Text Information Management System
C) Typhoid Information Management System
D) None

j) LIMS has fastened the process of management in _____development [1]
A) Clinical B) Preclinical
C) Lab D) Database

k) List and define the different types of number systems used in computer applications. [3]

l) Explain the role of HTML and CSS in creating web pages for pharmacy-related applications. [3]

m) Define Electronic Prescribing (EP). Mention any two benefits of using EP in hospitals. [3]

n) Describe the main objective of bioinformatics and how it is useful in pharmaceutical sciences. [3]

o) What are LIMS and TIMS? State one function of each system in pharmaceutical data management. [3]

PART-B (50 Marks)

2.a) Define the binary, octal, and hexadecimal number systems with examples.
b) Convert the decimal number 325 to binary, octal, and hexadecimal formats. [5+5]

OR

3.a) Explain the concept of Information Systems and Data Flow Diagrams (DFDs).
b) Analyze the stages of the software development life cycle and explain their significance in pharmacy applications. [5+5]

4.a) Describe the purpose of HTML and XML in pharmacy-related websites.
b) Create a basic HTML structure to display drug information in tabular format. [5+5]

OR

5.a) Compare MYSQL and MS Access as used in pharmacy database systems.
b) Evaluate the importance of using a centralized pharmacy drug database for hospital settings. [5+5]

6.a) List various applications of computers in Hospital and Clinical Pharmacy.
b) Demonstrate how an Electronic Prescribing system helps avoid prescription errors. [5+5]

OR

7.a) Describe the use of barcode medicine identification and mobile technology in medication adherence.
b) Critically evaluate the impact of automated drug dispensing systems in reducing workload and increasing patient safety. [5+5]

8.a) Explain the key objectives of Bioinformatics in pharmaceutical sciences.
b) Apply bioinformatics tools to suggest potential targets for vaccine discovery. [5+5]

OR

9.a) Analyze the structure of a bioinformatics database and its role in drug discovery.
b) Evaluate the contribution of bioinformatics in reducing time and cost in drug development. [5+5]

10.a) Explain the functions of Chromatographic Data Systems (CDS) in drug purity testing.
b) Illustrate how CDS can be used to analyze the stability of a pharmaceutical compound. [5+5]

OR

11.a) Distinguish between LIMS and TIMS in the context of pharmaceutical research data management.
b) Evaluate the effectiveness of LIMS in enhancing the quality and compliance of preclinical data analysis. [5+5]

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Code No: 282AE

R22

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Pharmacy I Year II Semester Examinations, September - 2024
COMPUTER APPLICATIONS IN PHARMACY

Time : 3 hours **Max Marks: 75**

Note: The end semester examinations will be conducted for 75 marks consisting of two parts viz. i) **Part- A** for 25 marks, ii) **Part - B** for 50 marks.

- **Part-A** is compulsory question which consists of fifteen sub-questions. The first ten sub-questions are of Objective type/ Multiple Choice Questions, 2 from each unit and carry 1 mark each. The next five sub-questions are Short Answer Questions one from each unit and carry 3 marks each.
- **Part-B** consists of ten Long Answer Questions (numbered from 2 to 11) carrying 10 marks each. Each of these questions is from one unit and may contain sub-questions. For each question there will be an "either" "or" choice, which means that there will be two questions from each unit and the student should answer either of the two questions.

(25 Marks)

PART- A

1.a) Hexadecimal number system consists of [1]
A) 4 digits and alphabets B) 8 digits and alphabets
C) 10 digits and alphabets D) 16 digits and alphabets

b) CDROM and DVD refers to [1]
A) Input media B) Output media
C) Hard drives D) Accessories

c) XML was designed to _____ data [1]
A) Describe B) Display
C) Write D) Mention

d) End tag in HTML contains [1]
A) Semicolon B) Back slash
C) Forward slash D) Hyphen

e) Computers in hospital pharmacy are used to maintain [1]
A) Drug records B) Patient records
C) Both of these D) None of these

f) What is the main purpose of barcode medicine identification [1]
A) Introduce computer intervention B) Faster dispensing
C) Upgrading technology D) Prevent human error

g) Genomic database refers to _____ [1]
A) Metabolic activity B) Protein Information
C) DNA Information D) Gene Information

h) Bioinformatics combines biology with _____. [1]
A) Pharmacy B) Chemistry
C) Pharmacology D) Medical Science

i) What is the role of computers in preclinical development? [1]
A) Ensures management of programs
B) Acts as storehouse of information
C) Used by pharmacists
D) Reviews computer programming techniques used in development.

j) LIMS has fastened the process of management in _____ development [1]
A) Clinical B) Preclinical
C) Lab D) Database

k) Write a short note on feasibility analysis? [3]

l) What is CSS and what are its advantages? [3]

m) Write a short note on drug information storage and retrieval. [3]

n) Write the role of bioinformatics in vaccine discovery [3]

o) What are the benefits of LIMS? [3]

PART-B (50 Marks)

2. How will you convert binary number system into decimal number system and vice versa? Give examples. [10]

OR

3.a) Write a short note on One's complement and Two's complement method.
b) Describe data flow diagrams. [5+5]

4. Explain about different generations of Programming Languages. [10]

OR

5.a) Explain various types of databases.
b) Explain about MS ACCESS. [5+5]

6.a) Write a short note on Mobile technology and adherence monitoring.
b) Write a short note on Pharma information system. [5+5]

OR

7.a) Explain about Pharmacokinetics.
b) Write a short note on Patient monitoring system. [5+5]

8. Briefly describe bioinformatics and its objectives. [10]

OR

9.a) What are the features of biological databases.
b) Name a few bioinformatics databases along with their usage. [5+5]

10. Discuss Laboratory Information Management system in detail. [10]

OR

11.a) What are the benefits of TIMS.
b) Write a sort note on CDS products. [5+5]

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Code No: 282AE

R22

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Pharmacy I Year II Semester Examinations, March - 2024
COMPUTER APPLICATIONS IN PHARMACY

Time : 3 hours

Max Marks: 75

Note: The end semester examinations will be conducted for 75 marks consisting of two parts viz. i) **Part- A** for 25 marks, ii) **Part - B** for 50 marks.

- **Part-A** is compulsory question which consists of fifteen sub-questions. The first ten sub-questions are of Objective type/ Multiple Choice Questions, 2 from each unit and carry 1 mark each. The next five sub-questions are Short Answer Questions one from each unit and carry 3 marks each.
- **Part-B** consists of ten Long Answer Questions (numbered from 2 to 11) carrying 10 marks each. Each of these questions is from one unit and may contain sub-questions. For each question there will be an "either" "or" choice, which means that there will be two questions from each unit and the student should answer either of the two questions.

PART - A

(25 Marks)

1.a) A computer language that is written in binary codes only is [1]
A) C B) C #
C) Machine language D) Pascal

b) Convert the binary equivalent 10101 to its decimal equivalent [1]
A) 21 B) 12
C) 22 D) 31

c) Identify the correct HTML tag among the following [1]
A) < Input > B) < Select >
C) < Textarea > D) < List >

d) The latest HTML standard is [1]
A) HTML 4.0 B) HTML 5.0
C) XML D) SGML

e) Abbreviate EP [1]
A) Electronic prescribing B) Extended play
C) Electronic performance D) Electronic photographs

f) Which of the following is not the applications of Barcode medications [1]
A) Medication verification B) Dosage accuracy
C) Electronic documentation D) Electronic Hidden Record

g) The process of finding medications via genetic research is known as [1]
A) Genomics B) Pharmacogenomics
C) Pharmacogenetics D) Pharmacoeconomics

h) The method of determining the relative position of genes on a chromosome is known as [1]
A) Gene monitoring B) Genome walking
C) Genome mapping D) Chromosome walking

i) Abbreviate TIMS [1]
A) Text Information Management System
B) Total Information Management System
C) Time Information Management System
D) Teacher Information Management System

j) Abbreviate LIMS
A) Local information management system
B) Laboratory Information management system
C) Legal Information management system
D) Ledger Information management system [1]

k) Enumerate in detail about binary subtraction with examples. [3]

l) Discuss in brief about MYSQL. [3]

m) Explain the role of computers in automated dispensing of drugs. [3]

n) Enumerate in brief the applications of bioinformatics in pharmacy. [3]

o) Enlist the applications of computers in pre-clinical development. [3]

PART-B

(50 Marks)

2.a) Describe in detail the One's compliment and Two's compliment method.

b) Write a detailed note on information gathering, requirement and feasibility analysis. [5+5]

OR

3.a) Discuss in detail the hexadecimal and octal number systems with examples.

b) Explain the steps involved in process life cycle. Enumerate in brief the process of planning and managing the project. [5+5]

4. Explain in detail the structure of the XML and CSS webpage with an example. [10]

OR

5.a) Discuss in detail about the MS ACCESS.

b) Explain in detail the introduction to web servers and server products. [5+5]

6.a) Enlist in detail the various applications of mathematical model in drug design.

b) Explain the various applications of computers in pharmacokinetics study of drug. [5+5]

OR

7.a) Write a detailed note on barcode medicine identification.

b) Enumerate in detail the importance of computers in hospital and clinical pharmacy. [5+5]

8. Write a detailed note on impact of bioinformatics in vaccine discovery. [10]

OR

9. Enumerate in detail the history and origin of bioinformatics. Enlist the various objectives of bioinformatics. [10]

10. Write a detailed note on Laboratory Information Management System (LIMS). Enlist the advantages and applications of LIMS. [10]

OR

11. Discuss in detail an overview of Text Information Management System (TIMS). Enumerate the various applications of TIMS in pharmacy. [10]

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