

Total No. of Questions : 3]

SEAT No. :

P3396

[Total No. of Pages : 2

**[5552] - 2001**  
**First Year B.Pharmacy (Semester - I)**  
**HUMAN ANATOMY AND PHYSIOLOGY - I**  
**THEORY**  
**(2018 Pattern)**

*Time : 3 Hours]*

*[Max. Marks : 75*

*Instructions to the candidates:*

- 1) *All questions are compulsory.*
- 2) *Neat labeled diagrams must be drawn wherever necessary.*
- 3) *Black figures to the right indicate full marks.*

**Q1)** Answer all the questions (Objectives) (Two mark each) **[2 × 10 = 20]**

- a) Draw a neat labeled diagram of Human Eye.
- b) Explain the functions of Blood.
- c) Define Homeostasis. Enlist the components of Feedback mechanism.
- d) Define cell, tissue, organ and system.
- e) Enlist the different types of WBC's.
- f) Draw a neat labeled diagram of ECG.
- g) Explain the functions of Lymphatic system.
- h) Give the functions of skeletal system.
- i) Explain Osmosis.
- j) Enlist the clotting factors.

**Q2)** Long Answers (Any 2 out of 3) **[2 × 10 = 20]**

- a) Define Blood pressure. Discuss the factors affecting blood pressure. Explain in detail hormonal regulation of blood pressure.
- b) Define Joint. Give structural and functional classification of joints. Write a detailed note on Synovial joint.
- c) Enlist the basic types of tissues with their characteristics. Describe the structure, location and function of various types of connective tissue.

**P.T.O.**

**Q3) Short Answers (Any 7 out of 9)**

**[7 × 5 = 35]**

- a) Explain the origin and functions of the cranial nerves.
- b) Explain with example Positive feedback mechanism.
- c) Distinguish between Sympathetic and Parasympathetic nervous system.
- d) Explain the Structure and functions of Lymph node.
- e) Explain the ABO system of Blood..
- f) Describe in detail about Connective tissue.
- g) Explain the forms of intracellular signaling.
- h) Explain the structure and working of Neuromuscular junction.
- i) Explain the anatomy and physiology of the Eye.



Total No. of Questions : 3]

SEAT No. :

P3397

[Total No. of Pages : 4

**[5552] - 2002**  
**First Year B.Pharmacy (Semester - I)**  
**102 : PHARMACEUTICAL ANALYSIS - I**  
**(2018 Pattern)**

*Time : 3 Hours]*

*[Max. Marks : 75*

*Instructions to the candidates :*

- 1) *All questions are compulsory.*
- 2) *Figures to the right indicate full marks.*

**Q1) Multiple choice question**

**[20 × 1 = 20]**

- i) In limit test of arsenic yellow stain is obtained due to
  - a) Arsenic
  - b) Arsenious acid
  - c) Arsine
  - d) None of above
- ii) As per pharmacopoeia the term “soluble means”
  - a) Less than 1 part
  - b) From 1 to 10 part
  - c) From 10 to 30 part
  - d) From 30 to 100 part
- iii) Meaning of the term titrant means
  - a) Solution in burette
  - b) Solution in conical flask
  - c) Solution in volumetric flask
  - d) None of above
- iv) Atomic weight of sodium is
  - a) 20
  - b) 23
  - c) 25
  - d) 26
- v) Potassium hydrogen phthalate is used as \_\_\_\_ solution
  - a) Primary standard
  - b) Secondary standard
  - c) Both of above
  - d) None of above
- vi) Normality of concentrated Hydrochloric acid is \_\_\_\_
  - a) 8
  - b) 11
  - c) 18
  - d) None of above

**P.T.O.**

- vii) Crystal violet indicator used in
- a) Acid base titration
  - b) Redox titration
  - c) Precipitation titration
  - d) Non aqueous titration
- viii) Meaning of LOD is
- a) Loss on drying
  - b) Limit of detection
  - c) Both of above
  - d) None of above
- ix) Silver nitrate solution is used in the assay of
- a) Boric acid
  - b) Citric acid
  - c) Magnesium nitrate
  - d) Sodium chloride
- x) Assay of potassium Iodide is performed by
- a) Iodimetry
  - b) Iodometry
  - c) Cerometry
  - d) None of above
- xi) Complexometric titrations are useful for the determination of \_\_\_\_\_
- a) Non-metal ions
  - b) Acidic drugs
  - c) Metal ions
  - d) All of the above
- xii) Colloids scatter the light due to \_\_\_\_\_
- a) Brownian motion
  - b) Tyndall effect
  - c) X-ray diffraction
  - d) fluorescence
- xiii) Which of the following is the strongest oxidizing agent?
- a)  $\text{BrO}_3^-$
  - b)  $\text{S}_2\text{O}_8^{2-}$
  - c)  $\text{ClO}_4^-$
  - d)  $\text{Cr}_2\text{O}_7^{2-}$
- xiv) Which ion is having highest molar conductivity?
- a)  $\text{Ag}^+$
  - b)  $\text{H}^+$
  - c)  $\text{OH}^-$
  - d)  $\text{Na}^+$
- xv) Gas sensing probes are used to detect \_\_\_\_\_ in potentiometric titrations.
- a) Inert gas
  - b) Target gas
  - c) Only oxygen
  - d) Only nitrogen

- xvi) Ions responsible for hardness of water are \_\_\_\_.
- a)  $\text{Ca}^{2+}$  and  $\text{Mn}^{2+}$                       b)  $\text{Mg}^{2+}$  and  $\text{Mn}^{2+}$   
c)  $\text{Mg}^{2+}$  and  $\text{Ca}^{2+}$                       d)  $\text{Ca}^{2+}$  and  $\text{K}^+$
- xvii) Which is not an example of colloid?
- a) Milk    b) Butter  
c) Pearl     d) All are colloids
- xviii) EDTA is a \_\_\_\_\_ ligand.
- a) Tetradentate                                  b) Octadentate  
c) Hexadentate                                 d) Pentadentate.
- xix) Which of the following is capable of acting both as an oxidizing agent and a reducing agent?
- a)  $\text{H}^+$     b)  $\text{Na}^+$   
c)  $\text{Sn}^{2+}$                                          d)  $\text{MnO}_4^-$
- xx) The process of gravimetric analysis using precipitation relies on the fact that \_\_\_\_
- a) Some ionic compounds are soluble in water while others are virtually insoluble  
b) Equal moles of two different chemicals are mixed together to form a precipitate  
c) The solubility of ionic compounds depends on temperature of the solution  
d) A complete balanced equation can be written for the precipitation reaction

OR

**Q1)** Answer the following **[10 × 2 = 20]**

- a) How will you calculate equivalent weight of acid and base? Explain with example.
- b) Starch indicator give blue color with iodine, justify it.
- c) Define the term normality and molality.

- d) Explain accuracy and precision.
- e) Give the preparation of 0.1N potassium permanganate with reaction.
- f) Give applications of polarography.
- g) Define oxidation and reduction with examples.
- h) How will you standardize 0.05 M disodium EDTA solution?
- i) What is half wave potential?
- j) How will you prepare and standardize 0.1 N Silver nitrate solution?

**Q2) Answer of the following (any two) [2 × 10 = 20]**

- a) What is volumetric analysis. Classify them with example. Write principle, reaction of assay for Boric acid and Aspirin.
- b) Explain methods to determine end point of potentiometric titrations and its application.
- c) What is complex metric titration? Classify them with example. Write detailed about types of complexometric titrations.

**Q3) Answer the following (any seven) : [7 × 5 = 35]**

- a) Explain assay sodium benzoate by non aqueous titration.
- b) Write a note on accuracy and precision.
- c) Give an account on solvents used in non aqueous titration.
- d) Write about limit test of lead.
- e) Write principle and application of Diazotization titrations.
- f) Explain construction and working of dropping mercury electrode.
- g) Write a note on K Fajan's method?
- h) Explain principle, reaction of calcium gluconate injection.
- i) Explain mechanism of co precipitation?



Total No. of Questions : 3]

SEAT No. :

**P3398**

[Total No. of Pages : 2

**[5552] - 2003**  
**First Year B.Pharmacy (Semester - I)**  
**PHARMACEUTICS - I**  
**(2018 Pattern)**

*Time : 3 Hours]*

*[Max. Marks : 75*

*Instruction : Answer all the questions.*

**Q1)** Answer the following :

**[10 × 2 = 20]**

- a) Differentiate between ointment and paste.
- b) Differentiate flocculated. & deflocculated suspension.
- c) Classify the powder by various ways.
- d) Give solubility enhancemnet techique of lig
- e) Give the labelling conditions of mouthwash and gargle.
- f) Give test for identification of emulsion.
- g) What is Eutectic mixture.
- h) Give the organisation of pharmacy.
- i) Define porology. Enlist factors which affect dose.
- j) Give the development of Indian Pharmacopoeia.

**Q2)** Answer any two.

**[2 × 10 = 20]**

- a) Explain the obsorption of semilids. Give its evaluation.
- b) Define and classify the Incompatibility. Explain chemical Incompatibility.
- c) Classify the bases of suppository. Explain how the displacement value of substance is calculated.

***P.T.O.***

**Q3) Solve any Seven**

**[7 × 5 = 35]**

- a) How will you convert 80 u/p & 30 o/p in % strength. similarly 80% & 30% alcohol in proof strength / spirits.
- b) Discuss various formulation aspects of suspensions.
- c) Explain Therapeutic Incompatibility.
- d) Classify emulsion by various ways. Give its stability parameters.
- e) Classify the powders. Explain with example divided powders.
- f) Explain importance of stock's law in stability of dispense system.
- g) Give the evaluation of suppository.
- h) Justify the role of pharmacist by his organisational structure.
- i) How much water is to be added to 400ml 30%, 500ml 20 % & 600 ml 80% alcohol to make 10% alcohol.





Total No. of Questions : 3]

SEAT No. :

**P3399**

[Total No. of Pages : 5

**[5552]-2004**

**First Year B.Pharmacy (Semester - I)**  
**PHARMACEUTICAL INORGANIC CHEMISTRY**  
**(2018 Pattern)**

*Time : 3 Hours]*

*[Max. Marks : 75*

*Instructions to the candidate:*

- 1) *All questions are compulsory.*
- 2) *Figures to the right indicate full marks*

**Q1)** Multiple choice questions.

**[20 × 1 = 20]**

- i. Identify the correct use of lead acetate cotton plug in limit test of arsenic.
  - A) To trap the lead impurity
  - B) To trap the moisture
  - C) To trap the sulfides
  - D) To trap the acetate impurity
- ii. The edition Indian Pharmacopoeia published in 2018 is-
  - A) 6<sup>th</sup>
  - B) 7<sup>th</sup>
  - C) 8<sup>th</sup>
  - D) 9<sup>th</sup>
- iii. In which of the following limit test hydrogen sulphide solution is required?
  - A) Limit test for Chloride
  - B) Limit test for Arsenic
  - C) Limit test for Heavy metals
  - D) Limit test for Lead
- iv. Identify in which type of following measurement Henderson-Hasselbalch equation is NOT useful.
  - A) Measurement of pH
  - B) Measurement of pKa
  - C) Measurement of isotonicity
  - D) Measurement of pH of buffer solution

**P.T.O.**

- v. Normal saline solution is -
- A) 0.9% NaCl solution
  - B) 0.45 % NaCl solution
  - C) 0.5% NaCl solution
  - D) 5% NaCl solution
- vi. Identify the substance the assay of which is based on complexometric titration.
- A) Sodium Bicarbonate
  - B) Ferrous sulfate
  - C) Calcium gluconate
  - D) Sodium chloride
- vii. Which one of the following electrolyte is NOT the constituent of Ringer's injection.
- A) Sodium Chloride
  - B) Sodium lactate
  - C) Calcium chloride
  - D) Potassium chloride
- viii. Identify the correct constituent of dental cement.
- A) Calcium carbonate
  - B) Zinc oxide
  - C) Dicalcium phosphate
  - D) Sodium fluoride
- ix. Which of the following compound swells in water and used as cathartic?
- A) Calcium carbonate
  - B) Aluminium hydroxide
  - C) Bentonite
  - D) Sodium bicarbonate
- x. Which concentration of hydrogen peroxide is suitable for cleaning of wounds?
- A) 100%
  - B) 99 %
  - C) 50 %
  - D) 6%

- xi. Which of the following agent is commonly called as “bleaching powder”?
- A) Hydrogen peroxide
  - D) Sulfur dioxide
  - C) Chlorinated lime
  - D) Citric acid
- xii. Which one of the following agent is used as antidote in cyanide poisoning?
- A) Activated charcoal
  - B) Penicillamine
  - C) Disodium EDTA
  - D) Sodium thiosulfate
- xiii. Identify the substance which is also known as Epsom salt.
- A)  $\text{CuSO}_4$
  - B)  $\text{MgSO}_4$
  - C)  $\text{FeSO}_4$
  - D)  $\text{Na}_2\text{SO}_4$
- xiv. Ferrous sulfate ( $\text{FeSO}_4 \cdot 7\text{H}_2\text{O}$ ) occurs as -
- A) White crystalline powder
  - B) Greenish crystalline powder
  - C) Amorphous powder
  - D) Colorless crystals
- xv. Which of following is not saline cathartic?
- A)  $\text{Mg}(\text{OH})_2$
  - B)  $\text{Na}_2\text{HPO}_4$
  - C) Sodium Potassium Tartarate
  - D)  $\text{CaSO}_4$
- xvi. Which of the following radiations have highest penetration power?
- A) Alfa
  - B) Beta
  - C) Gamma
  - D) All of the above

xvii. Isotopes have –

- A) Same number of protons but different number of neutrons
- B) Same number of neutrons but different number of protons
- C) Same number of protons and neutrons
- D) None of the above

xviii. Identify the correct use of Zinc chloride.

- A) Antacid
- B) Antidote
- C) Expectorant
- D) Dental desensitizing agent

xix. Chemically Kaolin is –

- A) Aluminium silicate
- B) Aluminium sulfate
- C) Magnesium trisilicate
- D) Silicon dioxide

xx. Calcium gluconate is used to treat -

- A) Hypokalemia
- B) Hypercalcemia
- C) Hyponatremia
- D) Hypocalcemia

**Q2)** Solve any two of the following.

**[2 × 10 = 20]**

- a) Explain the role of major physiological ions in homeostasis.
- b) What are cathartics? Give their classification & add a note on Magnesium Sulfate.
- c) What are radiopharmaceuticals? Explain properties of radiations emitted by radioisotopes & add note on various applications of radioisotopes

**Q3)** Solve any Seven of the following.

**[7 × 5 = 35]**

- a) Write comparison of alpha, beta & gamma radiations
- b) Write a note on properties reactions & uses of potassium permanganate IP.
- c) What are dentifrices? Explain any one compound in detail.
- d) What are haematinics? Explain properties & preparations of any one haematinic compound.
- e) Write principle & reaction involved in limit test of Lead.
- f) Describe different sources of impurities in detail.
- g) Write a note on treatment of cyanide poisoning.
- h) Write a note on expectorants.
- i) Write note on limit test for sulfate and the modifications in limit test for sulfate.



Total No. of Questions : 3]

SEAT No. :

**P3400**

[Total No. of Pages : 4

**[5552]-2005**

**F.Y.B. Pharmacy (Semester - II)  
HUMAN ANATOMY AND PHYSIOLOGY - II  
(2018 Pattern)**

*Time : 3 Hours]*

*[Max. Marks : 75*

*Instructions to the candidates:*

- 1) *All questions are compulsory.*
- 2) *Net labeled diagrams must be drawn wherever necessary.*
- 3) *Figures to the right indicate full marks.*

**Q1)** Answer all the questions (MCQs) (one mark each)

**[20 × 1 = 20]**

- i) Steroid hormones include \_
  - a) Sex hormones
  - b) Insulin
  - c) Thyroxin
  - d) Oxytocin
- ii) Which of the following is reabsorbed back into the blood via passive transport?
  - a) Amino acid
  - b) Water
  - c) Hydrogen ion
  - d) Calcium
- iii) Superior portion of Pharynx is called as \_
  - a) Oropharynx
  - b) Nasopharynx
  - c) Laryngo
  - d) Soft palate
- iv) Due to the influence of \_\_\_\_\_ vocal folds are usually thicker and longer in male than female.
  - a) Estrogen
  - b) Testosterone
  - c) Androgen
  - d) Progesterone
- v) Secretion of progesterone by corpus leuteum is initiated by \_
  - a) Testosterone
  - b) Thyroxin
  - c) MSH
  - d) Luteinizing Hormone
- vi) Melatonin is secreted by.
  - a) Pineal body
  - b) Skin
  - c) Pituitary gland
  - d) Thyroid

**P.T.O.**



- xvi) The main function of the cerebellum is \_\_\_\_\_.
- a) Consciousness                      b) Homeostasis  
c) Muscle coordination              d) Sense reception
- xvii) The \_\_\_\_\_ contains centers for heartbeat, breathing, and blood pressure.
- a) Cerebellum                              b) Cerebrum  
c) Medulla oblongata                  d) Spinal cord
- xviii) Schwann cells are one of several types of \_\_\_\_\_ cells in the nervous system.
- a) Sensory                                  b) Association  
c) Motor                                      d) Neuroglia
- xix) Gaps in the myelin sheath are called \_\_\_\_\_.
- a) Nodes of Ranvier                      b) The synapses  
c) Axonal interstices                      d) Myelinoids
- xx) Which of the following are the *parts* of neurons?
- a) Brain, spinal cord and vertebral column  
b) Dendrite, axon and cell body  
c) Sensory and motor  
d) Cortex, medulla and sheath

**Q2) Long Answer (solve any 2)**

**[2 × 10 = 20]**

- a) Draw a neat labelled diagram of digestive system. Write the structure and function of each organ.
- b) Enlist the endocrine glands with their hormone. Discuss the physiological action of pituitary gland.
- c) Draw a neat labelled diagram of female reproductive system. Discuss the physiology of menstruation.



**Q3) Short Answer (Solve any 7)**

**[7 × 5 = 35]**

- a) Explain the mechanism of respiration.
- b) Discuss the various function of liver.
- c) Explain spermatogenesis.
- d) Describe the structure and function of thyroid gland.
- e) Write a note on basal metabolic rate (BMR).
- f) Write the physiology of urine formation.
- g) Write the structure and functions of cerebellum.
- h) Classify neurons and discuss the properties of neurons.
- i) Explain the steps involved in protein synthesis.



Total No. of Questions : 3]

SEAT No. :

P3401

[Total No. of Pages : 4

[5552]-2006

**First Year B. Pharmacy, (Semester - II)**  
**PHARMACEUTICAL ORGANIC CHEMISTRY - I**  
**(2018 Pattern)**

*Time : 3 Hours]*

*[Max. Marks : 75*

*Instructions to the candidates:*

- 1) *All questions are compulsory.*
- 2) *Figure to the right indicate full marks.*

**Q1) Multiple Choice questions.**

**[20 × 1 = 20]**

- i) Select the correct name of organic compound containing the carbon, hydrogen and nitrogen atoms in their molecular structure.
  - a) Amines and imines
  - b) Nitriles
  - c) Esters
  - d) Both a and b
- ii) Select the correct statement from the following options.
  - a)  $SN_2$  reaction follows second order kinetics
  - b) No intermediate is involved in  $SN_2$  mechanism
  - c)  $SN_2$  reactions are one-step reaction
  - d) All of the mentioned
- iii) The reactivity order of alkyl halides in  $SN_2$  is
  - a)  $CH_3-X > 1^\circ > 2^\circ > 3^\circ$
  - b)  $CH_3-X > 2^\circ > 1^\circ > 3^\circ$
  - c)  $CH_3-X > 3^\circ > 1^\circ > 2^\circ$
  - d)  $CH_3-X > 3^\circ > 2^\circ > 1^\circ$
- iv) The percentage of p-character in  $SP^3$  hybridisation is
  - a) 25%
  - b) 50%
  - c) 75%
  - d) 66.67%
- v) Which of the following act as a catalysis in the nitration of benzene?
  - a) Conc. HCl
  - b) Dil. HCl
  - c) Conc.  $H_2SO_4$
  - d) Dil.  $H_2SO_4$
- vi) Identify the smallest alkane which can form a ring structure (cycloalkane)
  - a) Cyclomethane
  - b) Methane
  - c) Cyclopropane
  - d) Propane

**P.T.O.**

- vii) In  $E_2$  reaction, rate of reaction increases as decrease of solvent
- a) Polarity
  - b) Nonpolarity
  - c) Acidity
  - d) Basicity
- viii) Which of the following is the strongest bond?
- a) Covalent bond
  - b) Ionic bond
  - c) Co-ordinate bond
  - d) None
- ix) Which class of compounds shows H-bonding even more than in alcohols?
- a) Phenols
  - b) Carboxylic acids
  - c) Ethers
  - d) Aldehydes
- x) Which C-X bond has the highest bond energy per mole?
- a) C-Br
  - b) C-Cl
  - c) C-F
  - d) C-I
- xi) Which alkyl halide has the highest reactivity for a particular alkyl group?
- a) R-F
  - b) R-Cl
  - c) R-I
  - d) R-Br
- xii) Which of the following order is incorrect for the rate of  $E_2$  reaction?
- a) 5-Bromocycloheptene > 4-Bromocycloheptene
  - b) 2-Bromo-1-phenylbutane > 3-Bromo-1-phenylbutane
  - c) 3-Bromocyclohexene > Bromocyclohexane
  - d) 3-Bromo-2-methylpentane > 2-Bromo-4-methylpentane
- xiii) Identify the correct statement which is related to aromatic hydrocarbon.
- a) It has only sigma bonds
  - b) It has only pi bonds
  - c) It has a sigma and two pi bonds
  - d) It has a sigma and delocalized pi bond
- xiv) Identify the simplest alkane
- a) Methane
  - b) Methene
  - c) Ethane
  - d) Ethene

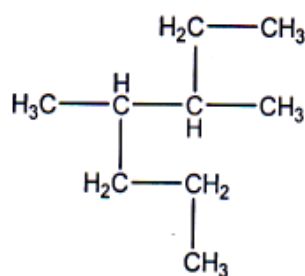


Q3) Answer the following (any seven)

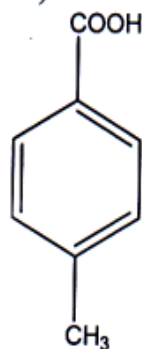
[7 × 5 = 35]

- Explain in detail  $sp^2$  hybridization in alkenes
- Explain in brief kinetics and order of reactivity of alkyl halides in  $SN_1$
- Define carboxylic acid? Explain the effect of substituent on acidity?
- Write classification of organic compounds with examples
- Write difference between  $SN_1$  and  $SN_2$  reaction
- Give IUPAC nomenclature for following.

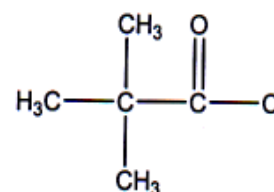
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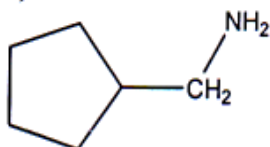
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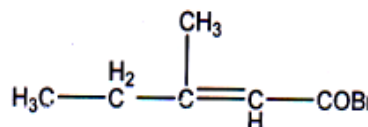
3)



4)



5)



- Draw structures for following:
  - 3-hydroxy-2-methylpropanal
  - 2,4-dimethyl-2-heptene
  - 2-chloropropanoic acid
  - Ethyl-2-methylbutanoate
  - 2-thiophenecarboxaldehyde
- Give structure and uses of following.
  - Ethyl alcohol
  - Chlorobutanol
  - Benzaldehyde
  - Lactic acid
  - Acetone
- Write a note on qualitative tests of
  - Alcohols
  - Aliphatic amines



Total No. of Questions : 3]

SEAT No. :

P3402

[Total No. of Pages : 4

**[5552]-2007**  
**First Year B. Pharmacy (Semester - II)**  
**BIOCHEMISTRY**  
**(2018 Pattern)**

*Time : 3 Hours]*

*[Max. Marks : 75*

*Instructions to the candidate:*

- 1) *All questions are compulsory.*
- 2) *Answers to the two sections should be written in separate books.*
- 3) *Neat diagrams must be drawn wherever necessary.*
- 4) *Figures to the right indicate full marks.*

**Q1)** Answer all the questions (MCQ's) (one mark each) **[20 × 1 = 20]**

- i) The minimum number of carbon in a monosaccharide is
  - a) 1
  - b) 2
  - c) 3
  - d) 4
- ii) Osazones are not formed with the
  - a) glucose
  - b) fructose
  - c) sucrose
  - d) lactose
- iii) Glucose-6-phosphatase is not present in
  - a) liver and kidneys
  - b) kidneys and muscles
  - c) kidneys and adipose tissue
  - d) muscles and adipose tissue
- iv) Cori's cycle transfers
  - a) glucose from muscles to liver
  - b) lactate from muscles to liver
  - c) lactate from liver to muscles
  - d) pyruvate from liver to muscles
- v) Before pyruvic acid enters the TCA cycle it must be converted to
  - a) acetyl Co-A
  - b) lactate
  - c)  $\alpha$ -ketoglutarate
  - d) citrate
- vi) All the following are sulphur containing amino acids found in proteins except
  - a) cysteine
  - b) cystine
  - c) methionine
  - d) threonine

**P.T.O.**

- vii) In proteins the  $\alpha$ -helix and  $\beta$ -pleated sheet are examples of
- Primary structure
  - Secondary structure
  - Tertiary structure
  - Quaternary structure
- viii) The number of ATP required for urea synthesis is
- 0
  - 1
  - 2
  - 3
- ix) The following enzyme of urea cycle is present in cytosol:
- Argininosuccinic acid synthetase
  - Argininosuccinase
  - Arginase
  - All of these
- x) All the following statements about albinism are correct except
- Tyrosine hydroxylase (tyrosinase) is absent or deficient in melanocytes
  - Skin is hypopigmented
  - It results in mental retardation
  - Eyes are hypopigmented
- xi) De novo synthesis of fatty acids occurs in
- Cytosol
  - Mitochondria
  - Microsomes
  - All of these
- xii) Fatty liver may be caused by
- Deficiency of methionine
  - Puromycin
  - Chronic alcoholism
  - All of these
- xiii) Lipid stores are mainly present in
- Liver
  - Brain
  - Muscles
  - Adipose tissue
- xiv)  $\beta$ -Oxidation of odd-carbon fatty acid chain produces
- Succinyl CoA
  - Propionyl CoA
  - Acetyl CoA
  - Malonyl CoA

- xv) All the following statements about obstructive jaundice are true except
- Prothrombin time may be prolonged due to impaired absorption of vitamin K
  - Serum alkaline phosphatase is raised due to increased release of enzyme from liver
  - Bile salts may enter systemic circulation due to biliary obstruction
  - There is no defect in conjugation of bilirubin
- xvi) The first enzyme found to have isoenzymes was
- Alkaline Phosphatase
  - Lactate dehydrogenase
  - Acid Phosphatase
  - Creatine kinase
- xvii) In non-competitive enzyme action
- $V_{max}$  is increased
  - Apparent  $k_m$  is increased
  - Apparent  $k_m$  is decreased
  - Concentration of active enzyme molecule is reduced
- xviii) Gout is a metabolic disorder of catabolism of
- Pyrimidine
  - Purine
  - Alanine
  - Phenylalanine
- xix) Translation results in a product known as
- Protein
  - tRNA
  - mRNA
  - rRNA
- xx) Okazaki fragment is related to
- DNA synthesis
  - Protein synthesis
  - mRNA formation
  - tRNA formation

**Q2) Long Answers (Any 2 out of 3)**

**[2 × 10 = 20]**

- Explain glycogen metabolism. Add a note on Glycogen Storage Diseases.
- Explain Conversion of Cholesterol to bile acids, steroid hormones and Vitamin D.
- Explain Translation or Protein Synthesis.



**Q3) Short Answers (Any 7 out of 9)**

**[7 × 5 = 35]**

- a) Classify enzymes. Add a note on its application.
- b) Explain inhibitors of ETC and Oxidative Phosphorylation.
- c) Explain Redox Potential.
- d) Explain HMP shunt. Add a note on its importance.
- e) Define and classify Amino acids based on metabolic fate. Add a note on Zwitter ion.
- f) Explain Ketoacidosis / Diabetes Mellitus.
- g) Write a note on Structure of DNA.
- h) Explain Ketogenesis.
- i) Explain significance of Dopamine and Melatonin.



Total No. of Questions : 3]

SEAT No. :

**P3403**

[Total No. of Pages : 4

**[5552]-2008**  
**First Year B.Pharmacy (Semester - II)**  
**PATHOPHYSIOLOGY**  
**(2018 Pattern)**

*Time : 3 Hours]*

*[Max. Marks : 75*

*Instructions to the candidate:*

- 1) *All questions are compulsory.*
- 2) *Neat labeled diagrams must be drawn wherever necessary.*
- 3) *Figures to the right indicate full marks.*

**Q1)** Answer all the questions (MCQ's) (one mark each)

**[20 × 1 = 20]**

- i) Parkinsonism includes combination of the following:
  - a) Tremor, bradykinesia & muscles rigidity
  - b) Paresis, anesthesia & muscles spasticity
  - c) Chorea & muscles hypotonia
  - d) Tremor, ataxia & muscles hypotonia
- ii) Dysphasia suggests the impairment of:
  - a) Speech
  - b) Gait
  - c) Swallowing
  - d) Movement
- iii) Meningeal sign is the following:
  - a) Babinsky
  - b) Kernig
  - c) Lasseg
  - d) Romberg
- iv) Which of the following heart muscle disease is unrelated to other cardiovascular disease?
  - a) Cardiomyopathy
  - b) Coronary artery disease
  - c) Myocardial infarction
  - d) Pericardial Effusion
- v) Septal involvement occurs in which type of cardiomyopathy?
  - a) Congestive
  - b) Dilated
  - c) Hypertrophic
  - d) Restrictive

**P.T.O.**

- vi) Which of the following is an important mechanism of prostaglandin mucosal protection?
- a) Stimulation of both mucus and phospholipid production
  - b) Promotion of bicarbonate secretion
  - c) Increased mucosal cell turnover
  - d) All of the above
- vii) Which of the following does not cause airway narrowing in an asthma attack:
- a) Destruction of airways
  - b) Mucus hyper secretion
  - c) Airway edema
  - d) Bronchospasm
- viii) Transmission of tuberculosis occurs:
- a) ONLY in household contacts of a person with active tuberculosis disease (source case)
  - b) By sharing household utensils, contact with secretions or blood products of a patient with tuberculosis disease.
  - c) By sharing an airspace with an adult who has smear positive pulmonary tuberculosis.
  - d) Prolonged contact with an individual with LTB.
- ix) In which anemia the count of reticulocytes is reduced?
- a) Acute post hemorrhagic anemia
  - b) Hemolytic anemia
  - c) Aplastic anemia
  - d) Megaloblastic anemia
- x) Which of the below anemia is called as Megaloblastic anemia?
- a) Chronic post hemorrhagic anemia
  - b) Folic acid & Vit B<sub>12</sub> deficiency anemia
  - c) Aplastic anemia
  - d) Hemolytic anemia
- xi) What factors may cause iron deficiency anemia.
- a) Deficiency of intrinsic Castl's factor
  - b) An increased iron demands
  - c) Decreased production of HCL by gastric mucosa
  - d) Deficiency of vitamin B<sub>12</sub>

- xii) Most common site of metastasis in breast cancer is
- a) Lung
  - b) Liver
  - c) Bone
  - d) Brain
- xiii) \_\_\_\_\_ is a genetically determined, internal, self destructive mechanism of cell death, which is activated under a variety of circumstances.
- a) Cytosis
  - b) Endocytosis
  - c) Apoptosis
  - d) Exocytosis
- xiv) \_\_\_\_\_ is an increase in the amount of organic tissue which results from cell proliferation leads to gross enlargement of an organ.
- a) Hyperplasia
  - b) Neoplasia
  - c) Metastasis
  - d) Tumour
- xv) Following is not a cardinal sign of inflammation.
- a) Calor
  - b) Dolar
  - c) Tumor
  - d) Solar
- xvi) Ulcerative bowel disease affects which of the following organ?
- a) Deodenum
  - b) Colon
  - c) Stomach
  - d) Rectum
- xvii) Deposition of lipids on the wall lining of lumen of large and medium sized arteries is called as \_\_\_\_\_
- a) Multiple Sclerosis
  - b) Stokes Adams Syndrome
  - c) Atherosclerosis
  - d) Hemophilia
- xviii) What is the end product of purine metabolism in human?
- a) Urea
  - b) Uric acid
  - c) Purine oxide
  - d) Xanthine
- xix) \_\_\_\_\_ an autoimmune disorder and is characterized by goiter, hyperthyroidism and exophthalmos.
- a) Gauchers disease
  - b) Graves disease
  - c) Raynauds disease
  - d) Crohns disease
- xx) Which of the following UV rays causes cancer?
- a) UV-A
  - b) UV-B
  - c) UV-C
  - d) UV-D

**Q2) Long Answers (Any 2 out of 3)**

**[2 × 10 = 20]**

- a) Explain in detail pathophysiology of congestive heart failure.
- b) Define homeostasis and explain in detail various components and types of feedback system.
- c) Explain different types of inflammation and explain various mechanisms of inflammation.

**Q3) Short Answers (Any 7 out of 9)**

**[7 × 5 = 35]**

- a) What is leprosy and give information about pathophysiology of leprosy.
- b) Explain in detail about pathophysiology of tuberculosis.
- c) Write a note on Angina pectoris.
- d) Explain Myocardial infarction in detail.
- e) What is COAD? Explain its pathophysiology.
- f) Define neoplasia. Classify and explain pathogenesis of cancer.
- g) Write pathophysiology of chronic renal failure.
- h) Write a note on Myocardial infarction.
- i) Explain in details about peptic ulcers.

