

Printed Pages-- 8

Roll No.

341250(41)

**B. Pharmacy (Second Semester) Examination,
April-May 2021**

(PCI Scheme)

(Pharmacy Branch)

HUMAN ANATOMY & PHYSIOLOGY-II

THEORY (BP201T)

Time Allowed : Three hours

Maximum Marks : 75

Note : All questions are compulsory. Marks are assigned against the each question.

1. Multiple choice question (answer all the question) : 20×1=20
 - (i) The hormone erythropoietin stimulates red blood cell production in the red bone marrow. Where in the body is erythropoietin produced?

341250(41)

PTO

[2]

- (a) Kidney
 - (b) Spleen
 - (c) Liver
 - (d) Heart
- (ii) Platelets are formed from what type of cell?
- (a) Melanocyte
 - (b) Erythrocyte
 - (c) Megakaryocyte
 - (d) Thrombocyte
- (iii) The process of coagulation is classically divided into how many pathways?
- (a) 3
 - (b) 2
 - (c) 1
 - (d) 5
- (iv) Branches of lymph capillaries inside villi of intestine are termed as :
- (a) Lymph nodes
 - (b) Thoracic duct

341250(41)

[3]

- (c) Thoracic lymph duct
 - (d) Lacteals
- (v) Spleen, thymus, tonsils and adenoids produces :
- (a) Erythrocytes
 - (b) Rhombocytes
 - (c) Phagocytes
 - (d) Lymphocytes
- (vi) The interventricular septum and intra-atrial septum separate the :
- (a) Chambers of the heart
 - (b) Chambers of the lungs
 - (c) Aorta and pulmonary artery
 - (d) Bicuspid and tricuspid valves.
- (vii) The only vein in the body that transport oxygen – rich blood is the :
- (a) Coronary vein
 - (b) Hepatic portal vein
 - (c) Pulmonary vein
 - (d) Aortic vein

341250(41)

PTO

[4]

- (viii) The condition called arrhythmia is characterized by :
- (a) Rapid heart contraction
 - (b) Irregular heart rhythms
 - (c) mitral valve prolapse
 - (d) Semilunar valve dysfunction
- (ix) The hepatic portal vein transport blood :
- (a) From the heart to the liver
 - (b) From the liver to the spleen
 - (c) From gastrointestinal tract to the liver
 - (d) From the liver to the gastrointestinal tract
- (x) In which part of the body digestion of protein begins?
- (a) Pancreas
 - (b) Stomach
 - (c) Small intestine
 - (d) Large intestine
- (xi) What is the function of bile juice secreted by liver?
- (a) If makes the food alkaline

[5]

- (b) If makes the food acidic
 - (c) If breaks down the food
 - (d) None of the above
- (xii) Oxygen and hemoglobin bind in a reversible manner to form :
- (a) Carboxyhemoglobin
 - (b) Oxyhemoglobin
 - (c) Methoglobin
 - (d) BPG
- (xiii) The exchange of gases between blood in systemic capillaries and tissue cells is called :
- (a) Pulmonary ventilation
 - (b) External respiration
 - (c) Internal respiration
 - (d) Exhalation
- (xiv) When glucose is found in urin it is called :
- (a) Glucosuria
 - (b) Vremia
 - (c) Ureteritis

[6]

- (d) Glucose intolerance
- (xv) Which of the following is not associated with the role of Kidneys?
- (a) Release of erythropoietin
 - (b) Release of renin
 - (c) Release of Vit. E
 - (d) Activate Vit. D
- (xvi) Human sperm moves with the help of :
- (a) Cilia
 - (b) Flagellum
 - (c) Basal of body
 - (d) Nucleosome
- (xvii) Spermatogonia are formed by :
- (a) Meiosis
 - (b) Mitosis
 - (c) Amitosis
 - (d) Meiosis-II

[7]

- (xviii) Fertilization of ova in human take place is :
- (a) Ovary
 - (b) Vagina
 - (c) Fallopian tube
 - (d) Uterus
- (xix) The _____ lines the uterine cavity and sloughs off during menstruation.
- (a) Myometrium
 - (b) Perimetrium
 - (c) Stratum functionalis
 - (d) None of the above
- (xx) Which is the source of energy for amino acid activation?
- (a) ATP
 - (b) GTP
 - (c) CTP
 - (d) TTP

2. Long answer (Answer **two** out of three) : $2 \times 10 = 20$

- (i) Explain anatomy of heart with the help of neat and labelled diagram?
- (ii) Draw neat and labelled diagram of digestive system? Discuss digestion of food in stomach and small intestine?
- (iii) Write an exhaustive note on spermatogenesis and Oogenesis?

3. Short answer (Answer **seven** out of nine) $7 \times 5 = 35$

- (i) Write mechanism of coagulation of blood?
- (ii) Describe the role of spleen in lymphatic system?
- (iii) Explain ECCs in brief?
- (iv) Write the function of liver in digestion?
- (v) Discuss mechanism of respiration in brief?
- (vi) What do you mean by artificial respiration. Explain in short?
- (vii) Describe physiology of urine formation?
- (viii) Discuss physiology of menstruation in short?
- (ix) Write short notes on protein synthesis?

341252(41)

**B. Pharmacy (Second Semester) Examination,
April-May 2021**

(PCI Scheme)

(Pharmacy Branch)

**PHARMACEUTICAL ORGANIC CHEMISTRY-I
THEORY (P202T)**

Time Allowed : Three hours

Maximum Marks : 75

Note : Question paper contains 3 parts namely Part A, Part B and Part C. Attempt all questions in Part A. Attempt any **two** questions in Part B. Attempt any **seven** question in Part C. Each question in Part A is of 1 mark. Each questions in Part B is of 10 marks. Each question in Part C is of 5 marks.

Part-A

1×20=20

Note : Attempt all questions.

1. Multiple Choice Questions :

[2]

- (i) Isomers have the same molecular formula but different functional groups are :
- (a) Position Isomers
 - (b) Chain Isomers
 - (c) Functional Isomers
 - (d) Optical Isomers
- (ii) LPG (House hold Cooking gas) is mainly a mixture of :
- (a) Methane + Ethane
 - (b) Acetylene + O_2
 - (c) Butane + Isobutane
 - (d) Acetylene + H_2
- (iii) The carbon atoms involved in the double bond of an alkene are :
- (a) sp hybridized
 - (b) sp^2 hybridized
 - (c) sp^3 hybridized
 - (d) None of these
- (iv) Lucas test is used to determine the type of :
- (a) Acids

341252(41)

[3]

- (b) Alcohols
- (c) Amines
- (d) Carbohydrates
- (v) Acetaldehyde on treatment with fehling's solution gives a precipitate of :
- (a) Cu
 - (b) CuO
 - (c) Cu_2O
 - (d) None of these
- (vi) Which molecule is an example of Ketone :
- (a) Salicylic acid
 - (b) Propamide
 - (c) Acetone
 - (d) Acetic anhydride
- (vii) Which of the following poisonous gas is formed when chloroform is exposed to light and air :
- (a) Mustard gas
 - (b) Carbon Monoxide
 - (c) Phosgene
 - (d) Chlorine

341252(41)

PTO

[4]

(viii) Gabriel phthalimide reaction is used for the synthesis of :

- (a) 1° aliphatic amines
- (b) 2° amines
- (c) 1° aromatic amines
- (d) 3° amines

(ix) Which of the following is most basic :

- (a) Ammonia
- (b) Methylamine
- (c) Dimethylamine
- (d) Trimethylamine

(x) Which of the following compound will show geometric isomerism :

- (a) Propene
- (b) 2-Butene
- (c) Propyne
- (d) 2-Butyne

(xi) $\begin{array}{c} | \quad | \\ -C-O-C- \\ | \quad | \end{array}$ is the functional group represented

by :

341252(41)

[5]

- (a) Ether
- (b) Aldehyde
- (c) Ketone
- (d) Ester

(xii) Carbylamine test is given by :

- (a) Primary amines
- (b) Secondary amines
- (c) Tertiary amines
- (d) None of these

(xiii) Which of the following bond is not present in carboxylic acid functional group :

- (a) O - H
- (b) C = O
- (c) C - C
- (d) C = C

(xiv) Alkyl halides undergo :

- (a) Electrophilic substitution reaction
- (b) Electrophilic addition reaction
- (c) Nucleophilic substitution reaction
- (d) Nucleophilic addition reaction

341252(41)

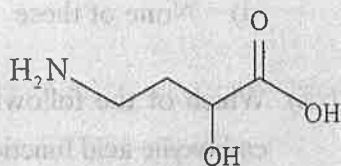
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[6]

(xv) Formula of N, N-dimethylethanamide is :

- (a) $\text{H}_3\text{C} - \text{CO} - \text{N} \begin{matrix} \text{CH}_3 \\ \text{CH}_3 \end{matrix}$
- (b) $\text{H}_3\text{C} - \text{NH} - \text{COCH}_3$
- (c) $\text{H}_3\text{C} - \text{CH}_2 - \text{CON}(\text{CH}_3)_2$
- (d) $\text{H}_3\text{C} - \text{CO} - \text{C}(\text{CH}_3)_2\text{NH}_2$

(xvi) IUPAC name of the compound



- (a) γ -amino- α -hydroxybutyric acid
- (b) 4-amino-2-hydroxybutanoic acid
- (c) α -amino- γ -hydroxybutyric acid
- (d) 1-amino-3-hydroxybutanoic acid

(xvii) Which alcohol has the lowest solubility in water :

- (a) Pentanol
- (b) Methanol

341252(41)

[7]

(c) Butanol

(d) Ethanol

(xviii) Basic hydrolysis of esters is called :

- (a) Saponification
- (b) Acidification
- (c) Esterification
- (d) Acetylation

(xix) Which of the following acid derivatives are most stable :

- (a) Acid chloride
- (b) Esters
- (c) Amides
- (d) Anhydrides

(xx) Which of the following aldehydes used alone, will undergo an aldol reaction :

- (a) Formaldehyde [HCHO]
- (b) Butanol [$\text{CH}_3(\text{CH}_2)_2\text{CHO}$]
- (c) Benzaldehyde [$\text{C}_6\text{H}_5\text{CHO}$]
- (d) 2-propenal [$\text{CH}_2=\text{CHCHO}$]

341252(41)

PTO

[8]

Part-B 2×10=20

Note : Answer any two question from Part-B. All question carry equal marks.

2. Give a brief note on SN1 and SN2 reactions and their mechanisms. Explain the factors which affects SN1 and SN2 reactions
3. Explain following name reactions : (any four)
 - (a) Halogenation of alkanes
 - (b) Cannizzaro reaction
 - (c) Nucleophilic addition
 - (d) Diel-Alder reaction
 - (e) Nucleophilic addition reaction
4. How is iodoform prepared? Explain the properties and uses.

Part-C

5×7=35

Note : Answer any seven question from Part-C. All question carry equal marks.

5. Explain Markownikoff's and Antimarkownikoff's rule.

341252(41)

[9]

6. Give a short note on E₁ and E₂ reaction.
7. Write structure and uses of ethyl chloride and chloroform.
8. Explain the effect of substituent on basicity of aliphatic amines.
9. Discuss the mechanism for the acid catalyzed and base catalyzed hydrolysis of amides.
10. How will you distinguish between primary, secondary and tertiary amines.
11. Why aldehydes and ketones are collectively called carbonyl compounds. Discuss Perkin condensation.
12. Give the structure and uses of acetic acid. How will you distinguish between formic acid and acetic acid.
13. Write Qualitative tests of Alcohols.

100]

341252(41)

341253(41)

**B. Pharmacy (Second Semester) Examination,
April-May 2021**

(PCI Scheme)

(Pharmacy Branch)

BIOCHEMISTRY-I

THEORY (BP203T)

Time Allowed : Three hours

Maximum Marks : 75

Note : All sections are compulsory. Marks are assigned against the each sections.

Section-A

(Multiple Choice Questions) 20×1=20

Note : Attempt all the questions. Each question carries 1 mark.

[2]

1. Multiple Choice Questions :

- (i) The citric acid cycle is inhibited by which of the following :
- (a) Fluroacetate
 - (b) Flurouracil
 - (c) Malic acid
 - (d) Aerobic conditions
- (ii) The main stores of glycogen are found in :
- (a) Erythrocytes
 - (b) Skeletal muscles
 - (c) Adipose tissue
 - (d) Brain
- (iii) Loss of electrons can be termed as :
- (a) Reduction
 - (b) Anabolism
 - (c) Metabolism
 - (d) Oxidation
- (iv) Which of the following is a component of succinate dehydrogenase in electron transport chain :

341253(41)

[3]

- (a) Niacin
 - (b) FMN
 - (c) FAD
 - (d) Coenzyme Q
- (v) The key regulatory enzyme of fatty acid synthesis is :
- (a) Acyl CoA synthetase
 - (b) Acetyl CoA Carboxylase
 - (c) Keto acyl synthase
 - (d) Thioesterase
- (vi) Name the energy source of the brain during starvation :
- (a) Fat
 - (b) Lipids
 - (c) Protein
 - (d) Ketone bodies
- (vii) Urea is synthesized in :
- (a) Cytoplasm
 - (b) Mitochondria

341253(41)

PTO

[4]

- (c) Both Mitochondria and Cytoplasm
(d) Lysosomes
- (viii) Dopamine is synthesized from which of the following amino acids :
- (a) Tyrosine
(b) Tryptophan
(c) Histidine
(d) Methionine
- (ix) Which of these is a hereditary disease caused due to an error in amino acid metabolism :
- (a) Homocystinuria
(b) Albinism
(c) Phenyl Ketonuria
(d) Branched chain Ketoacid uria
- (x) Which of the following is not the components of RNA :
- (a) Thymine
(b) Adenine
(c) Guanine
(d) Cytosine

341253(41)

[5]

- (xi) The sugar molecule in a nucleotide is :
(a) Pentose
(b) Hexose
(c) Tetrose
(d) Triose
- (xii) Semiconservative replication of DNA was first demonstrated in :
(a) Streptococcus pneumonia
(b) Salmonella typhimuriam
(c) Escherichia coli
(d) Drosophila melanogaster
- (xiii) Which of the following is considered as start codon :
(a) AUG
(b) UAG
(c) AGG
(d) GUG
- (xiv) The standard Gibb's free energy ΔG° is :
(a) The residual energy present in the products at equilibrium

341253(41)

PTO

[6]

- (b) The residual energy present in the reactants at equilibrium
- (c) The energy required to convert one mole of reactant to one mole of products
- (d) The difference in the residual energy of reactants and products at equilibrium
- (xv) Peptide bond is a :
- (a) Covalent bond
- (b) Metallic bond
- (c) Ionic bond
- (d) Hydrogen bond
- (xvi) The term enzyme was coined by :
- (a) Pasteur
- (b) Kuhne
- (c) Buchner
- (d) Urey Miller
- (xvii) Fat is hydrolysed by the enzyme known as :
- (a) Trypsin
- (b) Lipase

341253(41)

[7]

- (c) Pepsin
- (d) Amylase
- (xviii) A chemical substance which have ability to block the active site of enzyme is known as :
- (a) Apoenzyme
- (b) Coenzyme
- (c) Inhibitor
- (d) Deactivator
- (xix) The allosteric inhibitor of an enzyme
- (a) Causes the enzyme to work faster
- (b) Binds to the active site
- (c) Participate in feedback regulation
- (d) Denatures the enzyme
- (xx) Enzymes that differ in amino acid sequence but catalyze the same reaction are :
- (a) Co-enzyme
- (b) Co-factors
- (c) Apo enzyme
- (d) Iso enzymes

341253(41)

PTO

[8]

Section-B

(Long Answer Type Questions) $2 \times 10 = 20$

Note : Attempt any two questions. Each question carries 10 marks.

2. Explain citric acid cycle, its energetics and significance.
3. Discuss β -oxidation of saturated fatty acid.
4. Write an exhaustive note on semiconservative model of DNA replication.

Section-C

(Short Answer Type Questions) $7 \times 5 = 35$

Note : Attempt any seven questions. Each question carries 5 marks.

5. Write a note on gluconeogenesis and its significance.
6. Describe electron transport chain reaction in short.
7. Enlists the disorders of lipid metabolism, Elaborate any one of them.

341253(41)

[9]

8. Discuss urea cycle and its disorder.
9. Write synthesis and significance of nor adrenaline.
10. Write short note on protein synthesis.
11. Discuss biological significance of ATP.
12. Classify carbohydrate.
13. Explain enzyme kinetics in short.

100]

341253(41)

341254(41)

**B. Pharmacy (Second Semester) Examination,
April- May 2021**

(PCI Scheme)

(Branch : Pharmacy)

PATHOPHYSIOLOGY - THEORY (BP204T)

Time Allowed : Three hours

Maximum Marks : 75

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

1. (a) Write in details about the basic principles involved for cellular injury. 8

- (b) Describe different types of inflammation with its mechanism. 7

[2]

2. Write an essay on : 2×7.5=15
- (i) Ischemic heart disease
 - (ii) Atherosclerosis
3. Differentiate between megaloblastic anaemia and sickle cell anemia mention their basic principle. 15
4. Write notes on (any two) : 2×7.5=15
- (i) Diabetes
 - (ii) Epilepsy
 - (iii) Schizophrenia
5. Write essay on : 2×7.5=15
- (i) Peptic Ulcer
 - (ii) Rheumatoid arthritis
6. Write notes on etiology and pathophysiology of cancer. 15
Classify cancer with example if necessary.