

19/01/2023

Printing Pages :2

SVSU/R/1

Paper Code: MBBS 131

Enrollment No.

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M.B.B.S.

First Professional Examination, Jan 2023

Biochemistry – I

[Time: Three Hours]

[Max.Marks:100]

Note : Attempt all the questions. Use separate answer sheets for Section A & Section B. Parts of a question must be attempted in sequence. Draw well labeled diagrams wherever necessary.

MCQs (separate sheet will be provided)

[01x20=20]

SECTION - A

1. A 52-year-old female presents to medicine emergency in comatose state. Her BMI is estimated to be 33 kg/m². Her urine reports showed

Benedicts test—red precipitate.

Roth eras test- positive

ABG-pH-7.14

(3+7= 10)

- a) What is the probable diagnosis of the case?
- b) What is patho-physiology of above condition?

2. Describe in brief

(5x5=25)

- a) Coenzyme function of niacin?
- b) Dietary fiber is recommended for obesity
- c) Role of lipoprotein in cholesterol transport
- d) Animal cannot convert fat into glucose.
- e) Deficiency of vitamin K in new born

3. What are the Major sources of ATP production in skeletal muscle?

(5)

- a) 100-meter sprint
- b) 10,000-meter marathon?

[P.T.O.]

Section B

- Q. 1 A 3-year-old female child belonging to very poor socio-economic status was brought to the OPD by her mother who complained her child suffered from frequent fractures and listlessness. On examination, the child had a protruding abdomen and bowing of the lower extremities. Biochemical Investigations revealed very low serum levels of Vitamin D, phosphorous, and subnormal levels of calcium. (2+2+3+3= 10)

- a) What is your provisional diagnosis?
- b) What is the biochemical basis of this condition?
- c) Explain the metabolism of Vitamin D using flowchart.
- d) Discuss the various functions of Vitamin D.

Q2. Write Short notes on

(5X5=25)

- a) Isoenzymes
- b) Glycemic index
- c) Active methionine
- d) Xenobiotic
- e) ELISA

Q3. Define Cytochrome-p450

(5)

Enrollment No.

M.B.B.S.-131

Invigilator's Signature

FIRST PROFESSIONAL EXAMINATION JANUARY 2023**Biochemistry - I****Multiple Choice Questions**

Time : 15 Minutes

Max. Marks : 20

Marks Obt. :

Note : Write your Enroll. Number on Question paper. Each MCQ carries 01 mark. Each Question has only one best correct response. Encircle the correct answer letter. More than one encircle or any over writing will be considered as wrong answer. There is no negative marking. DO NOT use pencil for writing.

Q1. Glyceraldehyde 3 phosphate dehydrogenase is inhibited by

- (a) Arsenate (b) Arsenite
(c) Fluoride (d) -Iron

Q2 Free radical with highest activity is:

- (a) O₂ (b) OH•
(c) Hypochlorite (d) Peroxynitrite

Q3 Iron absorption is promoted by?

- (a) Vitamin C (b) Caffeine
(c) Phytates (d) Milk

Q4 A boy presents with staining of teeth, raised Coproporphyrin-I levels and increased risk of photosensitivity.

The enzyme deficient is:

- (a) Uroporphyrinogen Synthase (b) Uroporphyrinogen III Synthase
(c) Uroporphyrinogen Decarboxylase (d) Coproporphyrinogen Oxidase

Q 5- Which of the following is the major source of energy for cardiac myocytes?

- (a) Amino acids (b) Fatty acids
(c) Glucose (d) Glycogen

Q 6- Which of the following is a phase-II biotransformation reactions?

- (a) Acetylation (b) Hydrolysis
(c) Oxidation (d) Reduction

Q 7- Heparin is a?

- (a) GAG (b) PROTEIN
(c) GYLCOLIPID (d) POLYSACCHARIDE

Q 8- Most powerful chain breaking antioxidant amongst these is:

- (a) Glutathione peroxidase (b) Alpha tocopherol
(c) Superoxide dismutase (d) Vitamin C

Q 9- Sphingomyelinase deficiency is seen in?

- (a) Niemann pick disease (b) Farber's disease
(c) Tay-sachs disease (d) Krabbe's disease

Q 10- Which of the following is active in dephosphorylated state.

- (a) glycogen synthase (b) pyruvate carboxylase
(c) glycogen phosphorylase (d) Acetyl carboxylase.

Q11 Cellulose is not broken due to beta anomers at-

- (a) C1 (b) C2
(c) C5 (d) C6

[P.T.O.]

Q-12 All tissues convert glucose to lactate except

- (a) brain
- (c) lens

- (b) cornea
- (d) RBC

Q13-Nitric oxide is synthesized from which amino acid

- (a) Arginine
- (c) Lysine

- (b) Serine
- (d) Threonine

Q-14 Alpha oxidation of fatty acid take place in

- (a) Mitochondria
- (c) Endoplasmic reticulum

- (b) Golgi apparatus
- (d) Peroxisomes

Q15- Name the disease in which limit dextrin is deposited in liver

- (a) Mcardles disease
- (c) Anderson disease

- (b) Cori disease
- (d) Von girkes disease.

Q-16) Which of the following is not involved in generation of proton gradient

- (a) NADPH dehydrogenase
- (c) Succinate coq reductase

- (b) Coenzyme q cytochrome reductase
- (d) Cytochrome reductae.

Q17) Specific dynamic action is greatest for

- (a) Proteins
- (c) Fat

- (b) Carbohydrate
- (d) Vitamin

Q18) Amino acids are absorbed by?

- (a) Active transport
- (c) Facilitated transport

- (b) Passive transport
- (d) Pinocytosis

19) Which of the following is FALSE about oxygense?

- (a) Can incorporate 2 atoms of O₂ in a substance
- (c) Important in hydroxylation of steroids

- (b) Can incorporate 1 atom of O₂ in a substance
- (d) Catalyse carboxylation of drugs

Q20) Which amino acid does not take part in one carbon transfer

- (a) Glycine
- (c) Threonine

- (b) Serine
- (d) Tyrosine.

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M.B.B.S.

First Professional Examination, Jan 2023

Biochemistry – II

[Time: Three Hours]

[Max.Marks:100]

Note : Attempt all the questions. Use separate answer sheets for Section A & Section B. Parts of a question must be attempted in sequence. Draw well labeled diagrams wherever necessary.

MCQs (separate sheet will be provided)

[01x20=20]

SECTION - A

1. 40-year-old male presented with severe pain, redness and swelling of the base of the first metatarsophalangeal joint in the night after a bout of alcohol consumption. The patient wake up early in morning with severe pain in right big toe. the patient denies any trauma to the toe. His uric acid level was 10.6 mg/dl.

Answer the following questions?

(2+5+3=10)

- What is the likely diagnosis?
- What is pathogenesis of this condition?
- What drugs will be prescribed in the above condition

2. Describe in brief

(5x5=25)

- Xeroderma pigmentosa
- Mitochondrial DNA
- Causes and consequence of hyperkalemia
- Mechanism of action of methotrexate
- Voltage gated ion channel

3. What is hypersensitivity reaction? Discuss the various types with example?

(5)

[P.T.O.]

SECTION B

Q. 1. seven-year-old child presents to hospital with yellow discoloration of eyes and loss of appetite and malaise for one week. She has been passing dark colored urine and high colored feces for one week. Patient is known to be sickle cell anemia. Blood investigation shows total bilirubin- 4.5mg%, indirect bilirubin- 3.5mg% and direct bilirubin- 1.0 mg%. urine is negative for bile salts and pigments but shows dark pink on ehrlich's test.

Answer the following questions?

(6+2+2=10)

- a. What is jaundice and how you classify it.
- b. Explain biochemical finding in this case.
- c. What are other causes of hemolytic jaundice

Q. 2. Write short notes on.

(5x5=25)

- a) Facilitated diffusion
- b) Purine salvage pathway
- c) Chaperons
- d) Southern blotting
- e) DNA vaccine

Q.3. Define Apoptosis.

(5)

SVSU/R/2

Enrollment No.

M.B.B.S.-132

Invigilator's Signature

FIRST PROFESSIONAL EXAMINATION JANUARY 2023

Biochemistry - II

Multiple Choice Questions

Time : 15 Minutes

Max. Marks : 20

Marks Obt. :

Note : Write your Enroll. Number on Question paper. Each MCQ carries 01 mark. Each Question has only one best correct response. Encircle the correct answer letter. More than one encircle or any over writing will be considered as wrong answer. There is no negative marking. DO NOT use pencil for writing.

- 1 Hyponatremia is seen in-
 - (a) Alkalosis
 - (b) Diabetes insipidus
 - (c) Addison's disease
 - (d) Leukemia
- 2 Oncogenic virus associated with cancer of the cervix is
 - (a) Epstein barr virus
 - (b) HIV
 - (c) Human papilloma virus
 - (d) HTLV
- 3 Which of the following are important effectors in allergic reactions?
 - (a) Basophils
 - (b) Dendritic cells
 - (c) Lymphocytes
 - (d) Monocytes
- 4 The immunoglobulin found maximally in secondary immune response is
 - (a) IgM
 - (b) IgA
 - (c) IgE
 - (d) IgG
- 5 All of the following are mechanisms of Innate immunity EXCEPT:
 - (a) Epithelium and keratinocytes of skin
 - (b) Mucous membrane of respiratory and GIT tract
 - (c) Cilia in the respiratory tract
 - (d) Synthesis of plasma cells to combat antigen
- 6 Which of the following is Primary immune deficiency disease?
 - (a) Chediak Higashi syndrome
 - (b) AIDS
 - (c) SLE
 - (d) Myasthenia gravis
- 7 Which of the following are MHC-class I molecule?
 - (a) Endothelial cells
 - (b) Cytotoxic CD8+ T cells
 - (c) Dendritic cells
 - (d) Macrophages
- 8 Immunoglobulin present in saliva , mucus and tears
 - (a) IgA
 - (b) IgM
 - (c) IgG
 - (d) IgD
- 9 Urine of a patient with obstructive jaundice will give a positive test for all the following expect-
 - (a) Gmelin's test
 - (b) Hay's test
 - (c) Fouchet test
 - (d) Benzidine test

[P.T.O.]

- 10 Which of the following enzymes are raised in obstructive jaundice?
 (a) Alanine transferase (b) Aspartate transferase
 (c) Alkaline Phosphatase (d) Gamma glutaminase
- 11 Which of the following parameters are markers of renal failure
 (a) Decreased creatinine (b) Increased glucose
 (c) Hypokalemia (d) Increased urea and creatinine
- 12 During which phase of the cell cycle the cellular content of DNA is doubled:
 (a) Mitotic phase (b) G₁ phase
 (c) G₂ phase (d) S phase
- 13 The FALSE statement about NK cells is:
 (a) They are derived from large granular cells (b) They comprise about 5% of human peripheral lymphoid cells
 (c) They are MHC restricted cytotoxic cells (d) They express IgG Fc receptor
- 14 Organelle which plays a pivotal role in apoptosis is:
 (a) Cytoplasm (b) Golgi complex
 (c) Mitochondria (d) Nucleus
- 15 Xerodermapigmentosa is due to?
 (a) Base excision defect (b) Nucleotide excision defect
 (c) SOS repair defect (d) Cross linking defect
- 16 Features of human mitochondrial DNA are all EXCEPT:
 (a) Circular (b) Single stranded
 (c) High mutation rate (d) Maternal inheritance
- 17 APO B 48 and APO B 100 are expressed as product of same gene but differ due to
 (a) RNA splicing (b) RNA editing
 (c) Chromosomal loci (d) Mutation
- 18 Which of the following technique is used to detect specific proteins in a tissue sample extract?
 (a) Southern blot (b) Western blot
 (c) Northern blot (d) Eastern blot
- 19 Which of the following enzyme is NOT a protein?
 (a) DNAase (b) EcoR1
 (c) Ribozyme (d) Hexokinase
- 20 Chargaff rule state that
 (a) A+G=T+C (b) A/T=G/C
 (c) A=U=T=G=CT (d) A+T=G+C
