

THE TAMIL NADU Dr. M.G.R. MEDICAL UNIVERSITY

[MBBS 0825]

AUGUST 2025

Sub. Code: 7055

M.B.B.S. DEGREE EXAMINATION

(For the candidates admitted from the Academic Year 2024-2025)

FIRST PROFESSIONAL – (CBME)

PAPER I – BIOCHEMISTRY

Q.P. Code: 527055

Time: 20 Minutes

Maximum : 20 Marks

Answer All Questions

Shade the correct answer with Black or Blue ink ball point pen

SET - A

IV. Multiple Choice Questions:

(20 x 1 = 20)

1. All the following activities are taking place inside mitochondria EXCEPT
 - A) Tricarboxylic acid cycle
 - B) Electro Transport Chain
 - C) Beta Oxidation of Fatty acid
 - D) Denovo fatty acid synthesis
2. A 2 year old baby presented with delayed milestones. Which inborn error in carbohydrate metabolism is Mental retardation a feature?
 - A) EssentialPentosuria
 - B) Galactosemia
 - C) Carnitine deficiency
 - D) Glucose -6- Phosphate dehydrogenase deficiency
3. A newborn baby present with recurrent hypoglycemia. All are the reasons for hypoglycemia in Impaired Beta Oxidation EXCEPT
 - A) Low Acetyl CoA
 - B) Low NADH
 - C) High Insulin
 - D) Low ATP
4. Lipotropic factors are substances that
 - A) Prevents Fatty liver
 - B) Prevent cholesterol deposition in Liver
 - C) Prevent atherosclerosis
 - D) Induce Fatty liver
5. Sources of NADPH include all EXCEPT
 - A) Glucose -6- Phosphate dehydrogenase
 - B) 6-phosphogluconate dehydrogenase
 - C) Cytosolic Malate dehydrogenase
 - D) CytosolicIsocitrate dehydrogenase
6. In a competitive inhibition
 - A) Inhibitor has structural similarity to substrate
 - B) Km is decreased
 - C) Vmax is decreased
 - D) Reaction rate is independent of substrate concentration
7. Unsaturation of fatty acids is taking place in which of the following sub cellular fraction?
 - A) Mitochondria
 - B) Endoplasmic reticulum
 - C) Peroxisome
 - D) Lysosome
8. Which of the following dietary modifications have minimum hypocholesterolemic action?
 - A) Inclusion of fruits and vegetables
 - B) Dietary cholesterol <300mg/day
 - C) Intake of whole wheat bran
 - D) Consuming fish as the only non-veg food

9. Vitamin K is inhibited by
A) Isoniazid B) Methotrexate C) Dicoumarol D) Avidin
10. Which of the following vitamin is required for oxidative decarboxylation?
A) Thiamine pyrophosphate B) Pyroxidal phosphate C) Biotin D) Riboflavin
11. Daily requirement of Vitamin C is
A) 50 mg/day B) 75 mg/day C) 25 mg/day D) 100 mg/day
12. A symptomatic 45 year old woman came for checkup in a clinic. She is found to be hypercalcemic. Which hormone testing helps to differentiate the causes of hypercalcemia?
A) PTH B) Glucagon C) Vitamin B₁₂ D) Growth hormone
13. The Enzymes of Electron Transport Chain belong to the following classes except
A) Oxidases B) Dehydrogenases C) Peroxidases D) Reductases
14. Copper dependent enzymes are all EXCEPT
A) Homogentisate Oxidase B) Cytochrome Oxidase
C) Lysyl oxidase D) Tyrosinase
15. Iron is deficient in
A) Cereals B) Maize C) Milk D) Pulses
16. Which of the following element has antioxidant role?
A) Chromium B) Zinc C) Selenium D) Nickel
17. An elderly male presented with constipation. Physician advised him to take fibre rich diet. Increased intake of dietary fibre
A) Increase bowel motility B) Promotes constipation
C) Increases Cholesterol level D) Decreases glucose tolerance
18. Body is in positive nitrogen balance in
A) Corticosteroid therapy B) Chronic illness
C) Convalescence after illness D) Acute illness
19. A baby with severe malnutrition presented with edema to the pediatric clinic. The age of onset of Kwashiorkor is
A) Below 1 year B) 1 to 5 years C) More than 5 years D) 6 months
20. For which of the following test fasting sample is preferred?
A) Bilirubin B) Triglycerides C) Lipase D) Uric acid

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SET - B

IV. Multiple Choice Questions:

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C) Cytosolic Malate dehydrogenase D) Cytosolic Isocitrate dehydrogenase
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SET - C

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SET - D

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FIRST PROFESSIONAL – SUPPLEMENTARY (CBME)

PAPER I – BIOCHEMISTRY

Q.P. Code: 527055

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SET - A

IV. Multiple Choice Questions:

(20 x 1 = 20)

1. The fluid mosaic model of membranes include
 - A) Cholesterol molecules in the membrane increase the stability
 - B) Membrane contains bimolecular leaflet of lipids
 - C) Membrane proteins are fixed and cannot move
 - D) Permeability of drugs across cell membrane is dependent on their solubility in water
2. Fructokinase catalyses which reaction?
 - A) Fructose to Fructose -6-Phosphate
 - B) Fructose to Fructose -1-Phosphate
 - C) Fructose to Fructose -1,6-Phosphate
 - D) Fructose to Fructose -2,6-Phosphate
3. Exercise increases insulin sensitivity through
 - A) Upregulation of GLUT-4 receptors
 - B) Increase insulin secretion
 - C) Increase absorption of Glucose
 - D) Decrease absorption of Glucose
4. A healthy adult male wants to know his diabetic status since his parents have T2DM. The HbA1c level indicative of Diabetes Mellitus as per ADA criteria is
 - A) >5.7%
 - B) >6%
 - C) >6.5%
 - D) >6.2%
5. Ketone bodies cannot be utilized by
 - A) Skeletal Muscle
 - B) Smooth Muscle
 - C) Liver
 - D) Adipose tissue
6. The plasma sample of a 35 year old man after overnight refrigeration showed a creamy layer on top and opalescence below. The condition which is excluded is
 - A) Diabetes mellitus
 - B) Alcoholism
 - C) Hypothyroidism
 - D) Familial hypercholesterolemia
7. All of the following fatty acids are synthesized in our body EXCEPT
 - A) Palmitic Acid
 - B) Oleic Acid
 - C) Arachidonic Acid
 - D) Linolenic Acid
8. Termination of pregnancy is indicated in a 35 year old pregnant mother. Which eicosanoid derivative is useful in Medical termination of Pregnancy?
 - A) PGF_{2α}
 - B) PGI₂
 - C) PGH₂
 - D) TXA₂

9. Cyanide poisoning occurs due to
A) Inhibition of Cytochrome oxidase
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C) Inhibition of NADH CoQreductase
D) Uncoupling of oxidative phosphorylation
10. Secondary hyperlipidemia occurs in all the following conditions EXCEPT
A) Hypothyroidism B) Alcoholism
C) Chronic Pancreatitis D) Nephrotic syndrome
11. Skin and mucous membranes are affected in deficiency of all vitamins EXCEPT
A) Retinol B) Riboflavin C) Niacin D) Calcitriol
12. The characteristic finding in hypobetalipoproteinemia is
A) Acanthocytosis B) Orange tonsils C) Eruptivexanthomas D) Corneal arcus
13. All the following manifestations are seen in patients with pyridoxine deficiency EXCEPT
A) Skin rashes B) Peripheral neuritis
C) Convulsions in children D) Normocytic anaemia
14. Osteocalcin is a bone protein that helps in
A) Mineralization B) Demineralization C) Bone remodelling D) Matrix production
15. Bronze diabetes occurs in
A) Rheumatoid arthritis B) Hemosiderosis
C) Systemic lupus erythematosus D) Diabetes mellitus
16. Normal calcium level in blood is
A) 4-5 mg/dL B) 4-5 meq/L C) 9 -11 mg/dL D) 96-106 meq/L
17. In a patient with renal stones, serum calcium level was 12mg/dL and serum Inorganic phosphate was 2mg/dL. These findings are characteristic of
A) Excess Calcitonin secretion B) Vitamin D deficiency
C) Hyperparathyroidism D) Hypoparathyroidism
18. Trans fatty acids are
A) Nonatherogenic B) They lower HDL cholesterol
C) They decrease shelf life of food D) Low in processed foods
19. The limiting amino acid in rice is
A) Lysine, Threonine B) Lysine, Tryptophan
C) Phenylalanine, Tyrosine D) Cysteine, Methionine
20. A patient with constipation is advised high fibre diet. All are dietary constituents of fibre EXCEPT
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A) Cholesterol molecules in the membrane increase the stability
B) Membrane contains bimolecular leaflet of lipids
C) Membrane proteins are fixed and cannot move
D) Permeability of drugs across cell membrane is dependent on their solubility in water
17. Fructokinase catalyses which reaction?
A) Fructose to Fructose -6-Phosphate B) Fructose to Fructose -1-Phosphate
C) Fructose to Fructose -1,6-Phosphate D) Fructose to Fructose -2,6-Phosphate
18. Exercise increases insulin sensitivity through
A) Upregulation of GLUT-4 receptors B) Increase insulin secretion
C) Increaseabsorption of Glucose D) Decrease absorption of Glucose
19. A healthy adult male wants to know his diabetic status since his parents have T2DM.The HbA1c level indicative of Diabetes Mellitus as per ADA criteria is
A) >5.7% B) b>6% C) >6.5% D) .>6.2%
20. Ketone bodies cannot be utilized by
A) Skeletal Muscle B) Smooth Muscle C) Liver D) Adipose tissue

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SET - C

IV. Multiple Choice Questions:

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A) Acanthocytosis B) Orange tonsils C) Eruptivexanthomas D) Cornealarcus
2. All the following manifestations are seen in patients with pyridoxine deficiency EXCEPT
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15. The plasma sample of a 35 year old man after overnight refrigeration showed a creamy layer on top and opalescence below. The condition which is excluded is
A) Diabetes mellitus B) Alcoholism
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16. All of the following fatty acids are synthesized in our body EXCEPT
A) Palmitic Acid B) Oleic Acid C) Arachidonic Acid D) Linolenic Acid
17. Termination of pregnancy is indicated in a 35year old pregnant mother. Which eicosanoid derivative is useful in Medical termination of Pregnancy?
A) PGF_{2α} B) PGI₂ C) PGH₂ D) TXA₂
18. Cyanide poisoning occurs due to
A) Inhibition of Cytochrome oxidase
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SET - D

IV. Multiple Choice Questions:

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 - D) Low in processed foods
2. The limiting aminoacid in rice is
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16. All the following manifestations are seen in patients with pyridoxine deficiency EXCEPT
A) Skin rashes B) Peripheral neuritis
C) Convulsions in children D) Normocytic anaemia
17. Osteocalcin is a bone protein that helps in
A) Mineralization B) Demineralization C) Boneremodelling D) Matrix production
18. Bronze diabetes occurs in
A) Rheumatoid arthritis B) Hemosiderosis
C) Systemic lupus erythematosus D) Diabetes mellitus
19. Normal calcium level in blood is
A) 4-5 mg/dL B) 4-5meq/L C) 9 -11 mg/dL D) 96-106meq/L
20. In a patient with renal stones, serum calcium level was 12mg/dL and serum Inorganic phosphate was 2mg/dL. These findings are characteristic of
A) Excess Calcitonin secretion B) Vitamin D deficiency
C) Hyperparathyroidism D) Hypoparathyroidism
