

**M.B.B.S. DEGREE EXAMINATION
FIRST YEAR
PAPER I – BIOCHEMISTRY**

MULTIPLE CHOICE QUESTIONS

Q.P. Code: 526055

Time: 30 Minutes

Maximum : 20 Marks

Answer All Questions

Write one correct answer in the box provided in the Answer Script. No overwriting should be done.

III. Multiple Choice Questions:

(20 x 1 = 20)

1. The marker enzyme of lysosome is
 - A) Lactate dehydrogenase.
 - B) Cathepsin.
 - C) Galactosyl transferase.
 - D) Glucose - 6 - phosphatase.
2. One of the following is a lysosomal disorder
 - A) Inclusion cell disease.
 - B) Cystic Fibrosis.
 - C) Alport's syndrome.
 - D) Prions disease.
3. What is the biochemical basis for using sodium fluoride while collecting sample for glucose estimation?
 - A) For inhibiting glycolysis.
 - B) For better separation of serum.
 - C) For better separation of plasma.
 - D) For better estimation of cholesterol.
4. A three-month-old child exclusively on breast feeds presented with incessant crying, poor weight gain. Clinical examination revealed enlarged liver, cataract and positive benedict's test of the urine. The most likely condition is
 - A) Von Gierke's Disease.
 - B) McArdle's Disease.
 - C) Galactosemia.
 - D) Lactose intolerance.
5. Which of the following is derived lipid?
 - A) Triacyl glycerol.
 - B) Plasmalogen.
 - C) Prostaglandin.
 - D) Ganglioside.

6. The major apolipoprotein seen in chylomicron is
- A) Apo B₄₈.
 - B) Apo B₁₀₀
 - C) Apo AI
 - D) Apo AII
7. One of the following enzyme is not a protein
- A) Lactase
 - B) Hydrolase
 - C) Ribozyme
 - D) Ligase
8. To which class of enzymes is aldolase classified
- A) Oxidoreductase.
 - B) Isomerase.
 - C) Lyase
 - D) Ligase
9. Which Vitamin is excreted as oxalic acid?
- A) Retinoic Acid
 - B) Ascorbic Acid
 - C) Folic Acid
 - D) Pantothenic Acid
10. The Vitamin required for the synthesis of catecholamines is
- A) Vitamin K
 - B) Vitamin B₁₂
 - C) Vitamin C
 - D) Vitamin B6
11. Which of the following is an uncoupler of oxidative phosphorylation?
- A) Carbon Monoxide.
 - B) Cyanide.
 - C) Oligomycin.
 - D) 2,4 Dinitrophenol.
12. Physiological uncoupler of oxidative phosphorylation is one of the following
- A) Thyroxine
 - B) Tyrosin
 - C) Vascomycin
 - D) Carboxin
13. Citric acid cycle is otherwise called as Amphibolic cycle because it has both
- A) Anabolic and catabolic
 - B) Mitochondrial and cytoplasmic
 - C) Reversible and irreversible
 - D) Protein and lipid substrates

14. Total number of ATP's generated in one cycle of citric acid cycle is
- A) 8
 - B) 10
 - C) 16
 - D) 14
15. Which of the following causes negative nitrogen balance?
- A) Growth hormone
 - B) Insulin
 - C) Corticosteroid
 - D) Androgen
16. Factors affecting basal metabolic rate are all of the following EXCEPT
- A) Temperature
 - B) Exercise
 - C) Fever
 - D) Glucagon
17. Which of the following amino acid is required for synthesis of heme?
- A) Lysine
 - B) Cysteine
 - C) Phenylalanine
 - D) Glycine
18. Sick cell anemia is characterized by the following EXCEPT
- A) Homozygous Recessive Inheritance
 - B) Chronic hemolytic anemia, episodes of pain hyperbilirubinemia.
 - C) Polymerization of deoxyhemoglobin and under hypoxia.
 - D) Valine in position six of beta chain replaced by glutamate.
19. Factors affecting the fluidity of the cell membrane are all of the following EXCEPT
- A) Trans fatty acids
 - B) Cholesterol
 - C) Tight junction
 - D) Transition temperature
20. Impaired functions of aquaporins leads to
- A) Diabetes Mellitus
 - B) Cirrhosis
 - C) Nephrogenic Diabetes Insipidus
 - D) Hartnup's Disease

MAY 2021 SUPPLEMENTARY

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1. Cystic Fibrosis is due to the defect in the transport of
 - A) Copper ions.
 - B) Chloride ions.
 - C) Cysteine.
 - D) Potassium ions.
2. The predominant cation of intracellular fluid compartment is
 - A) Potassium.
 - B) Sodium.
 - C) Calcium.
 - D) Magnesium.
3. Which of the following is not a reducing sugar?
 - A) Glucose.
 - B) Fructose.
 - C) Lactose.
 - D) Sucrose.
4. Anderson's glycogen storage disease is caused by deficiency of
 - A) Branching Enzyme.
 - B) Debranching Enzyme.
 - C) Muscle Phosphorylase.
 - D) Liver Phosphorylase.
5. The following are lipotropic factor EXCEPT
 - A) Choline.
 - B) Lecithin.
 - C) Methionine.
 - D) Sphingomyelin.

6. The regulatory enzyme of cholesterol biosynthesis is
- A) HMG-Co-A Synthase.
 - B) Aceto Acetyl-Co-A Synthase.
 - C) HMG-Co-A Reductase.
 - D) Mevalonate Kinase.
7. Following are the factors affecting enzyme activity EXCEPT
- A) Temperature.
 - B) pH.
 - C) Substrate concentration.
 - D) Active site of the Enzyme.
8. Which metalloenzyme contains copper?
- A) Alcohol Dehydrogenase.
 - B) Hexokinase.
 - C) Tyrosinase.
 - D) Lipase.
9. Which hypervitaminosis causes histamine release and itching?
- A) Thiamine.
 - B) Riboflavin.
 - C) Niacin.
 - D) Biotin.
10. Which vitamin plays a role in regulation of gene expression and tissue differentiation?
- A) Vitamin – E.
 - B) Vitamin – K.
 - C) Vitamin – D.
 - D) Vitamin – A.
11. All of the following diseases are transmitted maternally EXCEPT
- A) Mitochondrial encephalopathy, lactic acidosis stroke like episodes (MELAS).
 - B) Lebers Hereditary Optic Neuropathy.
 - C) Myoclonic Epilepsy.
 - D) Hemophilia.
12. Iron-sulfur proteins are found in
- A) Complex IV and V.
 - B) Mitochondrial outer membrane.
 - C) Complex I and II.
 - D) Ubiquinone.
13. The Biologic effect of glucagon over metabolism include all of the following EXCEPT
- A) Increased Glycogenolysis.
 - B) Increased Ketogenesis.
 - C) Increased Glycogenesis.
 - D) Increased Gluconeogenesis.

14. Which of the following enzyme is inhibited by fluoroacetate?
- A) Fumarase.
 - B) Succinate Thiokinase.
 - C) Aconitase.
 - D) Citrate Synthase.
15. Value of specific dynamic action of carbohydrate is
- A) 25%.
 - B) 5%.
 - C) 30%.
 - D) 15%.
16. Negative nitrogen balance is associated with following situations EXCEPT
- A) Lack of an essential Amino Acid.
 - B) Inadequate Dietary Protein.
 - C) Burns.
 - D) Recovery from Acute illness.
17. The following are congenital hyper bilirubinemia's EXCEPT
- A) Dubin-Johnson Syndrome.
 - B) Turner's Syndrome.
 - C) Gilbert's Syndrome.
 - D) Rotor Syndrome.
18. Which of the following intermediate of citric acid cycle is the precursor of haem synthesis?
- A) Acetyl CoA.
 - B) Glutathyl CoA.
 - C) Succinyl CoA.
 - D) Isocitrate.
19. In porphyria cutanea tarda, the enzyme that is affected is
- A) Uroporphyrinogen III Cosynthase.
 - B) Uroporphyrinogen Decarboxylase.
 - C) Uroporphyrinogen – I Synthase.
 - D) Coproporphyrinogen Oxidase.
20. Which vitamin deficiency causes homocysteinemia?
- A) Thiamin
 - B) Niacin.
 - C) Folate.
 - D) Biotin.

M.B.B.S. DEGREE EXAMINATION
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1. Which of the following is a lipotropic factor?
 - A. Sphingomyelin.
 - B. Choline.
 - C. Cardiolipin.
 - D. Orotic acid.
2. Co enzyme A is derived from which of the following Vitamin ?
 - A. Niacin.
 - B. Biotin.
 - C. Pantothenic acid.
 - D. Cobalamin.
3. Pernicious anemia may result due to the dietary deficiency of which of the following vitamin ?
 - A. Folic acid.
 - B. Pyridoxine.
 - C. Pantothenic acid.
 - D. Cobalamin.
4. In premature newborns, the deficiency of which lipid is associated with respiratory distress syndrome
 - A. Phosphatidyl choline.
 - B. Phosphatidyl ethanolamine.
 - C. Phosphatidyl inositol.
 - D. Phosphatidyl glycerol.
5. Aspirin inhibits the activity of the enzyme
 - A. Lipoxygenase
 - B. Cyclooxygenase
 - C. Phospholipase A1
 - D. Phospholipase A2

6. Pulses are deficient in
 - A. Lysine
 - B. Threonine
 - C. Methionine
 - D. Tryptophan
7. Niemann-pick disease is due to defect in the which enzyme ?
 - A. Beta-glucosidase
 - B. Sphingomyelinase
 - C. Beta-galactosidase
 - D. Hexosaminidase A
8. Normal plasma cholesterol level is
 - A. 40 – 60 mg/100 ml.
 - B. 70 – 110 mg/100 ml.
 - C. 120 – 150 mg/100 ml.
 - D. 150 – 200 mg/100 ml.
9. The following vitamins has antioxidant property except
 - A. Vitamin C.
 - B. Vitamin E.
 - C. Vitamin A.
 - D. Vitamin K.
10. All of the following are substrates for gluconeogenesis except
 - A. Alanine.
 - B. Leucine.
 - C. Glycerol.
 - D. Methionine.
11. In TCA cycle, substrate level phosphorylation takes place in
 - A. Alpha ketoglutarate to succinyl CoA.
 - B. Succinyl CoA to succinate.
 - C. Succinate to fumarate.
 - D. Oxaloacetate to citrate.
12. Renal threshold for glucose is
 - A. 80 mg %
 - B. 120 mg %
 - C. 180 mg %
 - D. 200 mg %
13. The product of oxidation of odd chain fatty acids is
 - A. Aceto Acetyl CoA
 - B. Malonyl CoA
 - C. Propionyl CoA
 - D. Fumaryl CoA

14. Rate limiting step in Cholesterol synthesis is
- A. HMG CoA synthase.
 - B. HMG CoA lyase.
 - C. HMG CoA reductase.
 - D. Squalene synthase.
15. NADPH is required for
- A. Gluconeogenesis.
 - B. HMP Shunt.
 - C. Glycolysis.
 - D. Fatty acid Synthesis.
16. Glycogen synthesis is increased by
- A. Cortisone.
 - B. Insulin.
 - C. Glucagon.
 - D. Epinephrine.
17. An example of competitive inhibition of an enzyme is
- A. Succinate dehydrogenase by malonate.
 - B. Cytochrome oxidase by cyanide.
 - C. Hexokinase by glucose-6-phosphate.
 - D. Phosphofructokinase by citrate.
18. In a cell, digestive enzymes mostly occurs in
- A. Mitochondria.
 - B. Lysosomes.
 - C. Ribosome.
 - D. Golgi apparatus.
19. Net yield of ATP from one molecule of palmitic acid is
- A. 8 ATP
 - B. 32 ATP
 - C. 38 ATP
 - D. 106 ATP
20. Which factor decreases the affinity of hemoglobin for oxygen binding ?
- A. An increase in 2,3 BPG level in blood
 - B. A rise in pH
 - C. Oxidation of iron to ferric state in one subunit
 - D. Vomiting

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

[MBBS 0522]

MAY 2022

Sub.Code : 6055

M.B.B.S. DEGREE EXAMINATION

(For the candidates admitted from the Academic Year 2019-2020)

FIRST YEAR – SUPPLEMENTARY (CBME)

PAPER I – BIOCHEMISTRY

MULTIPLE CHOICE QUESTIONS

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1. Which of the following tissues can not utilise ketone bodies?
 - A. Renal Cortex.
 - B. Erythrocytes.
 - C. Brain.
 - D. Skeletal Muscle.
2. Burning foot syndrome is due to deficiency of which of the following vitamin
 - A. Riboflavin.
 - B. Niacin.
 - C. Pantothenic acid.
 - D. Thiamin.
3. Classic Galactosemia due to deficiency of which enzyme ?
 - A. Galactokinase.
 - B. Galactose – 1 – phosphate uridyltransferase.
 - C. Aldose reductase.
 - D. UDP Hexose-4-epimerase.
4. Essential pentosuria due to deficiency of which enzyme?
 - A. UDP – Glucose dehydrogenase.
 - B. Glucose-6-phosphate dehydrogenase.
 - C. Xylulose reductase.
 - D. Gulonolactone oxidase.
5. Which of the following is an Insulin dependent transporter
 - A. Glut 1
 - B. Glut 2
 - C. Glut 3
 - D. Glut 4

6. Which of the following is a Non Reducing sugar?
- A. Maltose.
 - B. Lactose.
 - C. Cellobiose.
 - D. Sucrose.
7. HMG CoA reductase is inhibited by
- A. Clofibrate.
 - B. Gemfibrosyl.
 - C. Lovastatin.
 - D. Cholestyramine.
8. Calories generated per gram of fat is
- A. 4 K Cal.
 - B. 5 K Cal.
 - C. 8 K Cal.
 - D. 9 K Cal.
9. Congenital Erythropoietic porphyria is caused by deficiency of
- A. ALA Synthase.
 - B. Uroporphyrinogen III Co synthase.
 - C. Coproporphyrinogen oxidase.
 - D. Uroporphyrinogen decarboxylase.
10. Daily requirement of Vitamin B1 (Thiamine) for a normal healthy adult is
- A. 1 microgram.
 - B. 5 microgram.
 - C. 100 microgram.
 - D. 1 milligram.
11. All the compounds act as antivitamins except
- A. Avidin.
 - B. Menadione.
 - C. INH.
 - D. Methotrexate.
12. Which enzyme is useful in treating myocardial infarction?
- A. Pepsin
 - B. Trypsin
 - C. Asparaginase
 - D. Streptokinase
13. What is the enzyme used in diagnostic technique of ELISA?
- A. Restriction endonuclease.
 - B. Horse radish peroxidase.
 - C. Reverse transcriptase.
 - D. Urokinase.

14. The glycosaminoglycans that serves as an anticoagulant
- A. Heparin.
 - B. Hyaluronic acid.
 - C. Chondroitin sulphate.
 - D. Dermatan sulphate.
15. In humans, a dietary essential fatty acid is
- A. Palmitic acid.
 - B. Stearic acid.
 - C. Oleic acid.
 - D. Linoleic acid.
16. Dietary fats after absorption appear in the circulation as
- A. HDL.
 - B. VLDL.
 - C. LDL.
 - D. Chylomicron.
17. According to MICHAELIS-MENTEN equation K_m of an enzyme
- A. Is substrate concentration at maximal rate.
 - B. Is substrate concentration at half maximal rate.
 - C. Enzyme concentration at maximum rate.
 - D. Enzyme concentration at half minimum rate.
18. Which of the following mineral is required by glutathione peroxidase
- A. Magnesium.
 - B. Copper.
 - C. Iron.
 - D. Selenium.
19. In liver, the conjugation of bilirubin is catalysed by which of the following enzyme ?
- A. Ferrochelatase.
 - B. UDP – glucuronyltransferase.
 - C. Pyruvate carboxylase.
 - D. Beta – glucuronidase.
20. Human insulin differs from bovine insulin in
- A. Biological activity.
 - B. Number of amino acids.
 - C. Position of disulphide bonds.
 - D. Sequence of amino acids.

M.B.B.S. DEGREE EXAMINATION
(For the candidates admitted from the Academic Year 2019-2020)

FIRST YEAR – (CBME)
PAPER I – BIOCHEMISTRY

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- Two sugars which differ from one another only in configuration around a single carbon atom are termed
A) Anomers B) Epimers C) Optical isomers D) Stereoisomers
- A 25 year old man presents with diarrhea, bloating, flatulence and frothy stools after consumption of milk and dairy products. Mention the enzyme deficient in this individual
A) Galactose-1-phosphate uridyl transferase B) Fructokinase
C) Aldolase B D) Lactase
- All of the following are branched except
A) Amylopectin B) Starch C) Amylose D) Glycogen
- Which of the following is not a lipid?
A) Glycerol B) Palmitic acid C) Triacylglycerol D) Cholesterol
- An infant, born at 28 weeks of gestation, rapidly gave evidence of respiratory distress. Lab and x-ray results supported the diagnosis of infant respiratory distress syndrome (RDS). Which of the following compound is the lung surfactant?
A) Dipalmitoyl Phosphatidyl Choline B) Phosphatidyl serine
C) Phosphatidyl ethanolamine D) Phosphatidyl inositol
- Which type of fatty acid is arachidonic acid?
A) 20:ω6 B) 20:ω3 C) 18:ω6 D) 22:ω3
- A postoperative patient on intravenous fluids develops lesions in the mouth (angular stomatitis). His Riboflavin level is found to be abnormally low. Which of the following TCA cycle enzymes is most likely to be affected?
A) Citrate synthase B) Isocitrate dehydrogenase
C) Malate dehydrogenase D) Succinate dehydrogenase
- Chylomicron transports triacylglycerol from intestine to:
A) Liver B) Kidney C) Extrahepatic tissues D) Brain
- The apoprotein present in nascent chylomicron is:
A) apo B100 B) apo B48 C) apo CII D) apo E
- Coenzymes of PDH complex are all except:
A) TPP B) Biotin C) FAD D) NAD

11. All the following causes shift of oxyhemoglobin dissociation curve to right except
A) Alkalosis B) 2, 3 BPG C) Hypoxia D) Anemia
12. A newborn is found to have fasting hypoglycemia. The nursery staff begins overnight feeds by nasogastric tube because they find that the child has consistently low blood sugars. A liver biopsy and molecular studies demonstrate an absence of glycogen synthase. The normal function of this enzyme is to do which of the following?
A) Remove glucose residues one at a time from glycogen in the liver.
B) Transfer glucose from UDP-glucose to the non-reducing end of a glycogen primer.
C) Hydrolyze α -1, 6 bonds of glycogen.
D) Function as a glucosyl 4:6 transferase.
13. Propionic acid accumulation from amino acid degradation will result from a deficiency of which one of the following vitamins?
A) Vitamin B₆ B) Biotin C) Folic acid D) Vitamin B₁
14. The storage form of vitamin A in mammals is
A) Retinyl esters B) Retinoic acid C) Retinal D) Beta carotene
15. A muscular 25-year-old man presents with dermatitis and an inflamed tongue. A history reveals that he has been consuming raw eggs as part of his training regimen for the past 6 months. Which of the following vitamins is most likely to be deficient in this patient?
A) Biotin B) Cobalamin (vitamin B₁₂)
C) Folic acid D) Niacin (vitamin B₃)
16. Which one of the following is characteristic of low insulin levels?
A) Increased glycogen synthesis
B) Decreased gluconeogenesis from lactate
C) Decreased glycogenolysis.
D) Increased formation of Beta-hydroxybutyrate
17. A deficiency in thiamine (vitamin B₁) would most likely lead to which of the following clinical manifestations?
A) Decrease in carboxylase enzyme activity
B) Decrease in serum lactate concentrations
C) Decrease in red blood cell transketolase activity
D) Increase in urinary methylmalonate
18. The genetic disease which results from a mutation in the gene coding for the enzyme β -hexosaminidase A is called:
A) Huntington disease B) Lesch-Nyhan syndrome
C) Tay-Sachs disease D) Amyotrophic lateral sclerosis
19. A patient with hereditary type 1 hyperlipidemia presents with elevated levels of chylomicrons and VLDL triglycerides in the blood. The main function of the chylomicrons in circulation is to do which of the following?
A) Transport lipids from the liver
B) Transport dietary lipids from the intestine to target tissues
C) Transport cholesterol from IDL to LDL
D) Act as a receptor for triacylglycerols in the liver
20. You decide to treat a patient who has very high levels of serum cholesterol with the statin drug atorvastatin. You know that this drug acts in the metabolic pathway leading to the synthesis of cholesterol. The substrate for the enzyme inhibited by the statin drugs is which of the following?
A) Acetoacetyl-CoA B) HMG-CoA
C) Isopentenyl pyrophosphate D) Mevalonate.

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

[MBBS 0323]

MARCH 2023

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1. All of the following are aldoses except:
A) Glucose B) Ribose C) Galactose D) Ribulose
2. The Glycosaminoglycan without any sulphate conjugation is
A) Dermatan sulphate B) Keratan sulphate C) Hyaluronic acid D) Heparin
3. Dipalmitoyl Phosphatidyl choline is an example of
A) Lecithin B) Plasmalogen C) Cardiolipin D) Cephalin
4. The marker enzyme of lysosome is
A) Lactate dehydrogenase B) Cathepsin
C) Galactosyl transferase D) Glucose - 6 – phosphatase
5. A three-month-old child exclusively on breast feeds presented with incessant crying, poor weight gain. Clinical examination revealed enlarged liver, cataract and positive Benedict's test of the urine. The most likely condition is
A) Von Gierke's Disease B) McArdle's Disease
C) Galactosemia D) Lactose intolerance
6. The apoprotein which activates Lipoprotein lipase is:
A) Apo B48 B) Apo B100 C) Apo CII D) Apo A1
7. True regarding chylomicron are all except:
A) HDL is involved in activation of chylomicron
B) Lipoprotein Lipase helps in the conversion of chylomicron to chylomicron remnant
C) Chylomicron remnant reaches the extrahepatic tissues
D) Chylomicron reaches the extrahepatic tissues
8. A 15 year old child presents with repeated episode of pancreatitis. Serum triglyceride concentration is 1100mg/dL, Cholesterol is 250mg/dL. Lipoprotein lipase activity is low. The diagnosis is:
A) Type I hyperlipoproteinemia B) Type II hyperlipoproteinemia
C) Type III hyperlipoproteinemia D) Type IV hyperlipoproteinemia
9. The mucopolysaccharide present in the glomerular basement membrane is:
A) Heparan sulphate B) Keratan sulphate
C) Hyaluronic acid D) Chondroitin sulphate

10. All of the following cells are dependent on glycolysis except?
A) Neurons B) RBC C) Renal medulla D) Red muscle fibres
11. Glucose enters into skeletal muscle by:
A) Simple passive diffusion B) Facilitated passive diffusion
C) Primary active transport D) Secondary active transport
12. The significance of Rappaport Leubering Shunt is:
A) ATP production B) Lactate formation
C) Source of fatty acid D) 2, 3 BPG production
13. All the following causes shift of oxyhemoglobin dissociation curve to right except
A) Increase in body temperature B) 2, 3 BPG
C) Alkalosis D) Acclimatisation
14. A mutation in complex II of the ETC will cause impairment of electron transfer from which of the following substrates?
A) α -Ketoglutarate B) Isocitrate C) Succinate D) Pyruvate
15. Which one of the following statements concerning vitamin B12 is correct?
A) The cofactor form is vitamin B12 itself
B) It is involved in the transfer of amino groups
C) It requires a specific glycoprotein for its absorption
D) It is present in plant products
16. A 30-year-old man goes to his dentist complaining of loosening teeth. Examination also reveals his gums are swollen, purple, spongy and multiple splinter haemorrhages near the distal ends of the finger nails and that a wound on the patient's forearm has failed to heal properly. Which of the following vitamins is most likely to be deficient in this patient?
A) Ascorbic acid (vitamin C) B) Biotin
C) Cobalamin (vitamin B₁₂) D) Riboflavin (vitamin B₂)
17. Prior to a race, many marathon runners will try to increase their glycogen concentrations by loading up with foods with high starch content, such as pasta. α - Amylase secreted by the pancreas will digest the starch into which of the following major products?
A) Amylose, amylopectin, and maltose B) Glucose, galactose, and fructose
C) Limit dextrins, maltose, and maltotriose D) Limit dextrins, lactose, and sucrose
18. Enzymes act by reducing the
A) Activation energy B) Binding energy C) Heat energy D) All the above
19. Iron sulphur proteins are components of
A) Citric acid cycle B) ATP synthase C) Beta- oxidation D) Respiratory chain
20. Tay-Sachs disease involves the metabolism of gangliosides. Gangliosides are composed of a ceramide backbone with at least which one of the following?
A) Phosphorylated sugar residue B) Glucose residue
C) Galactose residue D) Sialic acid residue.

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1. All of the following are trioses except:
A) Maltotriose B) Glyceroose C) Dihydroxyacetone D) Glyceraldehyde
2. The Glycosaminoglycan without uronic acid is
A) Dermatan sulphate B) Keratan sulphate
C) Chondroitin sulphate D) Heparan sulphate
3. A 67-year-old man suffers from congestive heart failure. He is taking digoxin, an effective inotrope, which contains a sugar component (glycol) and a nonsugar (aglycone) component. Digoxin would be best classified as which of the following?
A) Glycoprotein B) Glycoside C) Oligosaccharide D) Thioester
4. A young infant, who was nourished with a synthetic formula, was found to have a serum and urine sugar compound that yielded a positive reducing-sugar test but was negative when measured with glucose oxidase. Treatment of the urine and serum with acid to cleave glycosidic bonds did not increase the amount of reducing sugar measured. Which of the following compounds is most likely to be present in this infant's urine and serum?
A) Glucose B) Fructose C) Maltose D) Lactose
5. Proton pump inhibitors are a mainstay in the treatment of peptic ulcer disease and inhibit the gastric hydrogen ATPase. The hydrogen ATPase in the gastric mucosal parietal cell utilizes this energy to exchange one hydrogen ion from the cytoplasm for one extracellular potassium ion. What type of transport is this enzyme catalyzing?
A) Antiport coupled transport B) Symport coupled transport
C) Facilitated diffusion D) Simple diffusion
6. Allopurinol is used in the treatment of gout because of its ability to inhibit xanthine oxidase. This inhibition makes it impossible for the enzyme to degrade xanthine and hypoxanthine, which reduces the synthesis of urate, the culprit of gout. Allopurinol works through which one of the following mechanisms?
A) Suicide inhibition
B) Non-competitive inhibition
C) Allosteric interaction with the enzyme that increases V_{max}
D) Feedback inhibition
7. A 47-year-old obese man complains of having to get out of bed three times a night to urinate (polyuria), being constantly thirsty (polydipsia), and eating more often (polyphagia). The patient is diagnosed with insulin-resistant diabetes mellitus (type 2). If the patient's symptoms are due to a problem at the level of the glucose transporter, which one of the tissues indicated below will be most affected?
A) RBCs B) Muscle C) Brain D) Liver

8. A 24-year-old woman presents with diarrhea, dysphagia, jaundice, and white transverse lines on the fingernails (Mee lines). The patient is diagnosed with arsenic poisoning, which inhibits which one of the following enzymes?
 - A) Isocitrate dehydrogenase
 - B) Pyruvate dehydrogenase
 - C) Malate dehydrogenase
 - D) Succinate dehydrogenase
9. A 3-year-old boy presents to the pediatric clinic with the symptoms of hypotonia, lactic acidosis, and seizures. After an extensive workup, he is diagnosed with PDHC deficiency, an X-linked recessive disorder. Which one of the following cofactors is not required by this enzyme to convert pyruvate to acetyl CoA?
 - A) Thiamine
 - B) Lipoic acid
 - C) Pantothenate
 - D) Ascorbic acid
10. Which of the following is inhibited by the carbon monoxide poisoning?
 - A) Complex I of the ETC
 - B) Cytochrome oxidase
 - C) The ATP-ADP antiporter
 - D) ATP-synthase
11. True regarding competitive inhibition of an enzyme is,
 - A) K_m is increased
 - B) k_m is unaltered
 - C) K_m is decreased
 - D) V_{max} is decreased
12. All are TRUE regarding lipoprotein structure, EXCEPT :
 - A) Phospholipid is present in the non-polar lipid core
 - B) TAG and Cholesterol ester are present in the lipid core
 - C) Cholesterol is present in the amphipathic layer
 - D) Cholesterol ester is in the non-polar part
13. The rationale for the treatment of patient having gallstones with chenodeoxycholic acid is that this compound:
 - A) interferes with the enterohepatic circulation
 - B) inhibits cholesterol synthesis
 - C) increases de novo bile acid production
 - D) increases cholesterol solubility in bile
14. The following transport mechanism do not require energy except
 - A) osmosis
 - B) sodium potassium pump
 - C) Simple diffusion
 - D) facilitated diffusion
15. Glucose is trapped inside cells in the form of:
 - A) β D glucopyranose
 - B) UDP glucose
 - C) Glucose 6 phosphate
 - D) Fructose 6 phosphate
16. In anaerobic glycolysis, lactate is formed,
 - A) for the generation of ATP
 - B) for the regeneration of lactate
 - C) for the regeneration of pyruvate
 - D) for the regeneration of NAD
17. Fetal hemoglobin exhibits higher affinity for oxygen because
 - A) It exhibits higher affinity for 2,3 BPG
 - B) It has lower affinity for Carbon monoxide
 - C) It has lower affinity for 2,3 BPG
 - D) It exists in Taut structure
18. Deficiency of which vitamin causes fasting hypoglycaemia
 - A) Vitamin B6
 - B) Vitamin B12
 - C) Vitamin C
 - D) Vitamin B2

19. A patient presents in your office with very high levels of serum cholesterol. He states that he has tried to follow the diet and exercise regimen you gave him last year. You decide that this patient would benefit from a drug such as atorvastatin. This class of drugs is effective in treating hypercholesterolemia because it has what effect.
- A) Stimulates phosphorylation of the β -hydroxy- β -methylglutaryl-CoA reductase enzyme (HMG CoA reductase)
 - B) Binds cholesterol preventing it from being absorbed by the intestine
 - C) Directly prevents the deposition of cholesterol on artery walls
 - D) Inhibits the enzyme β -hydroxy- β -methylglutaryl-CoA reductase (HMG CoA reductase)
20. Crigler Najjar syndrome type 1 is a genetic disorder associated with unconjugated hyperbilirubinemia. What enzyme deficiency is responsible for the disease?
- A) Heme oxygenase
 - B) Biliverdin reductase
 - C) UDP-glucuronosyltransferase
 - D) G-6 -phosphate dehydrogenase.

[MBBS 1123]

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

[MBBS 0124]

JANUARY 2024

Sub. Code : 6055

**M.B.B.S. DEGREE EXAMINATION
(For the candidates admitted from the Academic Year 2019-2020)**

FIRST YEAR – SUPPLEMENTARY (CBME)

PAPER I – BIOCHEMISTRY

Q.P. Code: 526055

Time: 30 Minutes

Maximum : 20 Marks

Answer All Questions

**Choose one correct answer in the box provided in the Answer Script.
No overwriting should be done. Choice should be given in Capital Letters.**

III. Multiple Choice Questions:

(20 x 1 = 20)

1. All of the following are trioses except:
A) Maltotriose B) Glycerose C) Dihydroxyacetone D) Glyceraldehyde
2. The storage form of vitamin A in mammals is
A) Retinol B) Retinoic acid C) Retinal D) Beta carotene
3. Marilyn Manroe, the famous American model, actress and singer was suffering from insomnia. Her friend introduced her to a street drug “Lilly 33s.”, which is amobarbital!! She died at the age of 36, following intake of few “Lillies”!! Amobarbital acts by inhibiting electron transport from
A) Complex I to Q B) Complex II to Q
C) Complex III to Q D) Complex IV to Oxygen
4. CPTI is activated by all, EXCEPT:
A) Acyl CoA B) Malonyl CoA
C) High ADP/ATP ratio D) Glucagon
5. Liver cannot utilize ketone bodies because of lack of:
A) Thiolase B) Thioesterase
C) Thiophorase D) Aconitase
6. All of the following cells are dependent on glycolysis except
A) Neurons B) RBC C) Renal medulla D) Red muscle fibres
7. A neonate presented with hemolytic anemia. Peripheral smear revealed that it's case of non-spherocytic hemolytic anemia. Pyruvate kinase activity was remarkably low (0.675 U/g Hb). Which of the following explains haemolytic anaemia in this condition?
A) Low 2,3 BPG production B) High 2,3 BPG production
C) High ATP production D) Failure of Sodium Potassium ATPase pump
8. Coenzymes of PDH complex are all except
A) TPP B) Biotin C) FAD D) NAD
9. ALA synthase is an example of
A) Lyase B) Ligase C) Transferase D) Hydrolase

10. A breast fed infant begins to vomit frequently and lose weight. Several days later she is jaundiced, her liver is enlarged and cataracts are noticed in her lenses. She is diagnosed with classical galactosemia. The enzyme responsible for cataract in this condition is?
A) Galactose 1 phosphate uridyl transferase B) Lactase
C) Aldose reductase D) Aldolase B
11. The mucopolysaccharide with galactose instead of uronic acid is
A) Hyaluronic acid B) Heparin C) Heparan sulphate D) Keratan sulphate
12. A premature child presents with Infant Respiratory Distress Syndrome. The neonatologist says the neonate is yet to produce lecithin adequately. All of the following are components of lecithin except
A) Glycerol B) Choline C) Phosphatidate D) Ceramide
13. The inner non polar lipid core of Chylomicron is made up of
A) Phospholipid B) Monoacyl glycerol
C) Diacyl glycerol D) Cholesterol ester
14. Arachidonic acid is a fatty acid of which type?
A) 20:ω6 B) 20:ω3 C) 18:ω6 D) 22:ω3
15. Glucagon stimulates:
A) Liver glycogen phosphorylase B) Muscle glycogen phosphorylase
C) Glucokinase D) Hexokinase
16. Which of the following is true about uncompetitive inhibition of an enzyme?
A) Increases K_m B) Low V_{max}
C) High V_{max} D) Normal K_m
17. Thiamine deficiency is diagnosed by the estimation of
A) RBC transketolase B) RBC NAD concentration
C) RBC Glutathione peroxidase D) RBC Glutathione reductase
18. The enzyme marker for peroxisome is
A) Catalase B) Peroxidase
C) Glucose 6 phosphatase D) Hexokinase
19. Number of ATPs produced by complete oxidation of stearic acid is
A) 102 B) 120 C) 106 D) 160
20. Fatty acid oxidation happens in:
A) Cytoplasm B) Mitochondria
C) Endoplasmic reticulum D) Nucleus

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

[MBBS 0824]

AUGUST 2024

Sub. Code : 6055

M.B.B.S. DEGREE EXAMINATION

(For the candidates admitted from the Academic Year 2020 -2021 Onwards)

FIRST YEAR – (CBME)

PAPER I – BIOCHEMISTRY

Q.P. Code: 526055

Time: 20 Minutes

Maximum : 20 Marks

Answer All Questions

Choose one correct answer in the box provided in the Answer Script.
No overwriting should be done. Choice should be given in Capital Letters.

III. Multiple Choice Questions:

(20 x 1 = 20)

1. The marker enzyme of Golgi complex is
A) Glucose-6-phosphatase B) Galactosyl Transferase
C) Lactate Dehydrogenase D) Cathepsin
2. Metabolic function of Lysosome includes
A) Biosynthesis of proteins B) Drug metabolism
C) Degradation of proteins D) Ethanol oxidation
3. Example for Bond specificity of enzymes is
A) Urease B) Trypsin C) Hexokinase D) Lactate Dehydrogenase
4. The mucopolysaccharide that does not contain any Uronic Acid is
A) Heparin B) Hyaluronic acid C) Chondroitin sulphate D) Keratan sulphate
5. Apoenzymes of Pyruvate Dehydrogenase Complex include all, **EXCEPT**
A) Pyruvate Dehydrogenase B) Isocitrate Dehydrogenase
C) Dihydrolipoyl Transacetylase D) Dihydrolipoyl Dehydrogenase
6. Von Gierke's disease is due to deficiency of
A) Debranching enzyme B) Branching enzyme
C) Glucose-6-phosphatase D) Liver Phosphorylase
7. All of the following mucopolysaccharidosis present with corneal opacity, **EXCEPT**
A) Hurler's B) Hunter's C) Morquio's D) Scheie's
8. During fasting state, all of the following changes occur in adipose tissue, **EXCEPT**
A) Lipogenesis activated
B) Lipolysis increased
C) Hormone sensitive lipase activated
D) Free fatty acids increased in the blood
9. Action of Thromboxane include
A) Increased cyclic AMP level B) Vasoconstriction
C) Relaxation of bronchioles D) Inhibition of platelet aggregation

10. Deficiency of Alpha Galactosidase leads to
A) Gaucher's disease B) Niemann Pick's disease
C) Fabry's disease D) Krabbe's leukodystrophy
11. In mitochondria, Creatine Kinase is present
A) On Outer membrane B) Outer surface of inner membrane
C) In between outer and inner membrane D) Soluble matrix
12. Gilbert's disease is due to
A) Defect in uptake of bilirubin by the liver
B) Severe deficiency of UDP glucuronyl transferase
C) Defective organic anion transport in bile canaliculi
D) Defective bilirubin excretion
13. The enzyme that is elevated in Rickets is
A) Serum Alkaline phosphatase B) Serum Alanine amino transferase
C) Serum Gamma glutamyl transferase D) Serum Acid phosphatase
14. All of the following are actions of Epinephrine, **EXCEPT**
A) Increase in blood glucose level B) Promotes glycogenolysis
C) Favours uptake of amino acids D) Inhibits Gluconeogenesis
15. All of the following are biological effects of Insulin on protein metabolism, **EXCEPT**
A) Inhibition of transaminases
B) Stimulation of ornithine trans carbamoylase
C) Stimulation of RNA polymerase
D) Favouring ribosome assembly
16. Non-Modifiable risk factor for cardiovascular disease is
A) Cigarette smoking B) Diabetes Mellitus C) Hypertension D) Age
17. All are causes of Hyperkalemia, **EXCEPT**
A) Addison's disease B) Increased hemolysis
C) Burns D) Cushing's syndrome
18. The biochemical role of Vitamin E is
A) Most powerful natural Antioxidant B) Causing hemolysis
C) Aggravating ageing process D) Increasing risk of atherosclerosis
19. The Vitamin needed for Oxidative Decarboxylation of alpha keto acid is
A) Pantothenic acid B) Pyridoxine C) Thiamine D) Riboflavin
20. The Vitamin that is necessary for hydroxylation of Proline and Lysine is
A) Vitamin A B) Vitamin B12 C) Vitamin C D) Vitamin D

10. Deficiency of Beta Glucosidase leads to
A) Gaucher's disease B) Niemann Pick's disease
C) Fabry's disease D) Krabbe's leukodystrophy
11. In mitochondria, Mono Amino Oxidase is present
A) On Outer membrane B) Outer surface of inner membrane
C) In-between outer & inner membrane D) Soluble matrix
12. Crigglar Najar Syndrome is due to
A) Defect in uptake of bilirubin by the liver
B) Severe deficiency of UDP glucuronyl transferase
C) Defective organic anion transport in bile canaliculi
D) Defective bilirubin excretion
13. Serum Alanine amino transferase level is elevated in
A) Parenchymal liver disease B) Obstructive liver disease
C) Alcoholic liver disease D) Cholestasis
14. All of the following are the effects of Insulin, EXCEPT
A) Lowering of blood glucose B) Favours glycogenesis
C) Promotes Glycolysis D) Favours Gluconeogenesis
15. All of the following are biological effects of Insulin on lipid metabolism, EXCEPT
A) Stimulation of acetyl-CoA carboxylase B) Inhibition of HMG-CoA reductase
C) Inhibition of hormone sensitive lipase D) Stimulation of glycerol kinase
16. Modifiable risk factor for cardiovascular disease is
A) Age B) Male gender C) Family history of CAD D) Cigarette smoking
17. All are causes of hypokalemia, EXCEPT
A) Cushing's syndrome B) Renal tubular acidosis
C) Increased hemolysis D) Adreno Genital syndrome
18. All are sources of Vitamin E, EXCEPT
A) Fish liver oil B) Wheat germ oil C) Sunflower oil D) Safflower oil
19. The Vitamin needed for Transamination reactions is
A) Pantothenic acid B) Pyridoxal Phosphate C) Thiamine D) Riboflavin
20. Barlow's disease is due to deficiency of
A) Vitamin A B) Vitamin B12 C) Vitamin C D) Vitamin D

M.B.B.S. DEGREE EXAMINATION

(For the candidates admitted from the Academic Year 2021 – 2022 to 2023 – 2024)

FIRST PROFESSIONAL – (CBME)

PAPER I – BIOCHEMISTRY

Q.P. Code: 526055

Time: 20 Minutes

Maximum : 20 Marks

Answer All Questions

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

SET - A

III. Multiple Choice Questions:

(20 x 1 = 20)

1. Which of the following is not synthesized in endoplasmic reticulum?
A) Lipoproteins B) Glycoproteins C) RNA D) Ganglioside
2. Glycosaminoglycans present in cornea
A) Keratan sulfate B) Hyaluronic acid
C) Chondroitin sulfate D) Dermatan sulfate
3. The marker enzyme of Lysosome is
A) Lactate dehydrogenase B) Cathepsin
C) Galactosyltransferase D) Glucose – 6 - phosphatase
4. Nonfunctional enzymes are all except
A) Alkaline phosphatase B) Acid phosphatase
C) Lipoprotein lipase D) Gamma glutamyl transpeptidase
5. Suicidal enzyme is
A) Cyclooxygenase B) Thromboxane synthase
C) 5' Nucleotidase D) Lipoxygenase
6. The following is a cardio protective fatty acid
A) Trans fatty acid B) Omega -3 fatty acid C) Oleic acid D) Palmitic acid
7. Which organ does not utilize ketone bodies?
A) Liver B) Brain C) Skeletal muscle D) Cardiac muscle
8. Which is the lipoprotein with lowest density?
A) HDL B) LDL C) Lipoprotein a D) VLDL
9. A young black man entered his physician's office complaining of bloating and diarrhea. His eyes were sunken and the physician noted additional signs of dehydration. The patient reported similar episodes following ingestion of a significant amount of dairy products. The most likely condition is
A) Pentosuria B) McArdle's disease C) Steatorrhea D) Lactose intolerance
10. The vitamin deficiency causing circumferential vascularization is
A) Vitamin B1 B) Vitamin B2 C) Vitamin B12 D) Vitamin B6

11. Vitamin K is required for activation of
A) All clotting factors B) Factors II, VII, IX and X
C) Von Willebrand factor D) Factors II and XI
12. Heme biosynthesis does not occur in
A) Liver B) Osteocyte C) RBC D) Bone marrow
13. No. of iron in transferrin
A) 1 B) 2 C) 3 D) 4
14. Hyperammonemia inhibits TCA cycle by depleting
A) Oxaloacetate B) Alpha ketoglutarate C) Fumarate D) Succinyl CoA
15. Which of the coenzymes do not take part in TCA cycle
A) TPP B) NAD⁺ C) FAD D) PLP
16. Which of the hormones can uncouple oxidative phosphorylation?
A) Inulins B) Cortisol C) Thyroxine D) Glucagon
17. The mobile electron carrier in electron transport chain is
A) NADHCoQ reductase B) Cytochrome reductase
C) Coenzyme Q D) Cytochrome oxidase
18. A balanced diet should have calories for carbohydrate, protein and fat in the following ratio:
A) 50:15:35 B) 40:30:30: C) 60:20:20 D) 70:10:10
19. The following carbohydrate is indigestible
A) Lactose B) Glycogen C) Pectin D) Fructose
20. Hypercholesterolemia in a 15-year-old girl may be due to the following causes, except:
A) Nephrotic syndrome B) Hypothyroidism
C) Type IV hyperlipoproteinemia D) Obstructive jaundice

[MBBS 0825]

M.B.B.S. DEGREE EXAMINATION

(For the candidates admitted from the Academic Year 2021 – 2022 to 2023 – 2024)

FIRST PROFESSIONAL – (CBME)

PAPER I – BIOCHEMISTRY

Q.P. Code: 526055

Time: 20 Minutes

Maximum : 20 Marks

Answer All Questions

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

SET - B

III. Multiple Choice Questions:

(20 x 1 = 20)

1. Glycosaminoglycans present in cornea
A) Keratan sulfate B) Hyaluronic acid
C) Chondroitin sulfate D) Dermatan sulfate
2. The marker enzyme of Lysosome is
A) Lactate dehydrogenase B) Cathepsin
C) Galactosyltransferase D) Glucose – 6 - phosphatase
3. Nonfunctional enzymes are all except
A) Alkaline phosphatase B) Acid phosphatase
C) Lipoprotein lipase D) Gamma glutamyl transpeptidase
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A) Trans fatty acid B) Omega -3 fatty acid C) Oleic acid D) Palmitic acid
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9. The vitamin deficiency causing circumferential vascularization is
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10. Vitamin K is required for activation of
A) All clotting factors B) Factors II, VII, IX and X
C) Von Willebrand factor D) Factors II and XI

11. Heme biosynthesis does not occur in
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A) 1 B) 2 C) 3 D) 4
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[MBBS 0825]

M.B.B.S. DEGREE EXAMINATION

(For the candidates admitted from the Academic Year 2021 – 2022 to 2023 – 2024)

FIRST PROFESSIONAL – (CBME)

PAPER I – BIOCHEMISTRY

Q.P. Code: 526055

Time: 20 Minutes

Maximum : 20 Marks

Answer All Questions

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

SET - C

III. Multiple Choice Questions:

(20 x 1 = 20)

1. The following is a cardio protective fatty acid
A) Trans fatty acid B) Omega -3 fatty acid C) Oleic acid D) Palmitic acid
2. Which organ does not utilize ketone bodies?
A) Liver B) Brain C) Skeletal muscle D) Cardiac muscle
3. Which is the lipoprotein with lowest density?
A) HDL B) LDL C) Lipoprotein a D) VLDL
4. A young black man entered his physician's office complaining of bloating and diarrhea. His eyes were sunken and the physician noted additional signs of dehydration. The patient reported similar episodes following ingestion of a significant amount of dairy products. The most likely condition is
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[MBBS 0825]

M.B.B.S. DEGREE EXAMINATION

(For the candidates admitted from the Academic Year 2021 – 2022 to 2023 – 2024)

FIRST PROFESSIONAL – (CBME)

PAPER I – BIOCHEMISTRY

Q.P. Code: 526055

Time: 20 Minutes

Maximum : 20 Marks

Answer All Questions

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

SET - D

III. Multiple Choice Questions:

(20 x 1 = 20)

1. Heme biosynthesis does not occur in
A) Liver B) Osteocyte C) RBC D) Bone marrow
2. No. of iron in transferrin
A) 1 B) 2 C) 3 D) 4
3. Hyperammonemia inhibits TCA cycle by depleting
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A) Vitamin B1 B) Vitamin B2 C) Vitamin B12 D) Vitamin B6
20. Vitamin K is required for activation of
A) All clotting factors B) Factors II, VII, IX and X
C) Von Willebrand factor D) Factors II and XI

[MBBS 0825]

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

[MBBS 1025]

OCTOBER 2025

Sub. Code: 6055

M.B.B.S. DEGREE EXAMINATION

(For the candidates admitted from the Academic Year 2021 – 2022 to 2023 – 2024)

FIRST PROFESSIONAL – SUPPLEMENTARY - (CBME)

PAPER I – BIOCHEMISTRY

Q.P. Code: 526055

Time: 20 Minutes

Maximum : 20 Marks

Answer All Questions

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

SET - A

III. Multiple Choice Questions:

(20 x 1 = 20)

1. The marker enzyme of microsomes is
A) Lactate Dehydrogenase B) Cathepsin
C) Galactosyl Transferase D) Glucose-6-phosphatase
2. One of the following is peroxisomal disorder
A) Inclusion cell disease B) Cystic fibrosis
C) Zellweger syndrome D) Prion's disease
3. LDH -5 level is elevated in which cell injury?
A) Muscle B) RBC C) Liver D) Heart
4. A child with low blood glucose is unable to do glycogenolysis or Gluconeogenesis.
Which of the following enzyme is missing in the child
A) Glucokinase B) Fructokinase C) Transketolase D) Glucose-6-hosphatase
5. Which of the following a lyase?
A) Acetyl CoA Synthetase B) Aldolase B
C) Fatty Acyl CoA Dehydrogenase D) Acetyl CoA Carboxylase
6. Which of the following is not an aldose
A) Glucose B) Fructose C) Mannose D) Galactose
7. Essential fatty acid is
A) Linoleic acid B) Oleic acid C) Palmitic acid D) Free fatty acid
8. Which of the following is not a cholesterol derivative?
A) Vitamin A B) Adrenaline C) Progesterone D) Estrogen
9. A person on a fat free carbohydrate diet continues to grow obese. Which of the following lipoproteins is likely to be increased in his blood
A) HDL B) LDL C) VLDL D) Chylomicrons
10. Which vitamin deficiency causes lactic acidosis?
A) Riboflavin B) Biotin C) Thiamine D) Niacin

11. Active form of vitamin D is
A) 25 hydroxycholecalciferol B) 1,25 dihydroxycholecalciferol
C) 24,25 dihydroxycholecalciferol D) Cholecalciferol
12. A 10-year-old boy presents increased levels of serum bilirubin, increased bilirubin in urine and no Urobilinogen. Diagnosis is
A) Hemolytic jaundice B) Gilberts syndrome
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13. The following are true of myoglobin EXCEPT
A) It has 4 polypeptide chains
B) Binds oxygen
C) Oxygen binding affinity is higher than that of hemoglobin
D) Contains one heme residue per molecule
14. Acetyl-CoA is used for the production of all the following, EXCEPT
A) Oxidation in TCA cycle B) De novo fatty acid synthesis
C) Glucose formation D) Cholesterol formation
15. Which amino acid can enter the TCA cycle as fumarate and oxaloacetate?
A) Aspartate B) Arginine C) Glutamate D) Serine
16. Which of the electron carrier is lipid soluble and mobile?
A) CoQ B) Cytochrome c C) Cytochrome a D) Cytochrome b
17. The inborn error due to mutation in NADH-Q reductase is
A) Amyotrophic lateral sclerosis B) Leber's optic myopathy
C) Ragged red fiber disease D) Duchenne muscular dystrophy
18. Which has the highest calorific value?
A) Glucose B) Albumin C) Ethanol D) Palmitic acid
19. Which has no role in calculating calorie requirements?
A) Respiratory quotient B) Specific dynamic action
C) Basal metabolic rate D) Nature of work
20. Oxidative phase of HMP pathway produce all, EXCEPT
A) CO₂ B) ATP C) Pentose phosphates D) NADPH

M.B.B.S. DEGREE EXAMINATION

(For the candidates admitted from the Academic Year 2021 – 2022 to 2023 – 2024)

FIRST PROFESSIONAL – SUPPLEMENTARY - (CBME)

PAPER I – BIOCHEMISTRY

Q.P. Code: 526055

Time: 20 Minutes

Maximum : 20 Marks

Answer All Questions

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

SET - B

III. Multiple Choice Questions:

(20 x 1 = 20)

1. Which of the following is not an aldose
A) Glucose B) Fructose C) Mannose D) Galactose
2. Essential fatty acid is
A) Linoleic acid B) Oleic acid C) Palmitic acid D) Free fatty acid
3. Which of the following is not a cholesterol derivative?
A) Vitamin A B) Adrenaline C) Progesterone D) Estrogen
4. A person on a fat free carbohydrate diet continues to grow obese. Which of the following lipoproteins is likely to be increased in his blood
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16. The marker enzyme of microsomes is
A) Lactate Dehydrogenase B) Cathepsin
C) Galactosyl Transferase D) Glucose-6-phosphatase
17. One of the following is peroxisomal disorder
A) Inclusion cell disease B) Cystic fibrosis
C) Zellweger syndrome D) Prion's disease
18. LDH -5 level is elevated in which cell injury?
A) Muscle B) RBC C) Liver D) Heart
19. A child with low blood glucose is unable to do glycogenolysis or Gluconeogenesis.
Which of the following enzyme is missing in the child
A) Glucokinase B) Fructokinase C) Transketolase D) Glucose-6-hosphatase
20. Which of the following a lyase?
A) Acetyl CoA Synthetase B) Aldolase B
C) Fatty Acyl CoA Dehydrogenase D) Acetyl CoA Carboxylase

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M.B.B.S. DEGREE EXAMINATION

(For the candidates admitted from the Academic Year 2021 – 2022 to 2023 – 2024)

FIRST PROFESSIONAL – SUPPLEMENTARY - (CBME)

PAPER I – BIOCHEMISTRY

Q.P. Code: 526055

Time: 20 Minutes

Maximum : 20 Marks

Answer All Questions

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SET - D

III. Multiple Choice Questions:

(20 x 1 = 20)

1. Which has the highest calorific value?
A) Glucose B) Albumin C) Ethanol D) Palmitic acid
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M.B.B.S. DEGREE EXAMINATION

(For the candidates admitted from the Academic Year 2022 – 2023 & 2023 – 2024)

FIRST PROFESSIONAL – (CBME)

PAPER I – BIOCHEMISTRY

Q.P. Code: 526055

Time: 20 Minutes

Maximum : 20 Marks

Answer All Questions

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

SET - A

III. Multiple Choice Questions:

(20 x 1 = 20)

1. Which of the following disease result from deficiency of ABC (ATP-binding cassette) transporters?
A) Wilson's disease
B) Dubin-Johnson syndrome
C) Zellweger syndrome
D) Liddle's syndrome
2. A 10-month-old child presents with hepatomegaly, severe fasting hypoglycemia, hyperuricemia and lactic acidosis. Blood glucose remains low after glucagon administration.
A) Pyruvate dehydrogenase
B) Galactose 1 phosphate uridylyltransferase
C) Glucose 6 phosphatase
D) Glucokinase
3. Role of glucagon in fat metabolism includes all EXCEPT:
A) Promotes beta-oxidation
B) Decreases malonyl-CoA
C) Activates hormone-sensitive lipase
D) Increases triacylglycerol synthesis
4. Which of the following biochemical parameter serves as a predictor of progressive renal damage
A) Microalbuminuria
B) Glycated haemoglobin
C) Ketonuria
D) Hyperlipidemia
5. In fructose intolerance, enzyme deficient is:
A) Aldolase A
B) Aldolase B
C) Fructokinase
D) Fructose 6 phoshatase
6. A competitive inhibitor:
A) Binds to an allosteric site
B) Lowers Vmax but not Km
C) Increases Km but not Vmax
D) Has no effect on either Km or Vmax
7. Beta glycosidic bond is present in
A) Starch
B) Heparin
C) Glycogen
D) Lactose
8. Which step of TCA cycle is responsible for substrate level phosphorylation?
A) Citrate to isocitrate
B) Succinyl CoA to succinate
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9. Deficiency of Lipoprotein lipase and apo C-II causes:
A) Type I hyperlipidemia
B) Type II hyperlipidemia
C) Type III hyperlipidemia
D) Type V hyperlipidemia

...2...

10. A 1-year-old child presents with hepatosplenomegaly, developmental delay, hypotonia and a cherry-red spot on the macula. Bone marrow biopsy shows foamy macrophages. What is the most likely diagnosis?
A) Gaucher disease
B) Hurler syndrome
C) Niemann-pick disease
D) Krabbe disease
11. All the following are metallo-enzymes, EXCEPT:
A) Xanthine oxidase
B) Hexokinase
C) Carbonic anhydrase
D) Lactate dehydrogenase
12. The anti-oxidant function of vitamin E is potentiated by:
A) Zinc
B) Copper
C) Magnesium
D) Selenium
13. Elevated levels of one of the following enzymes serves as a marker of chronic alcoholism:
A) Alkaline phosphatase
B) Gamma-glutamyl-transferase
C) Alanine transaminase
D) Aspartate transaminase
14. An infant develops bleeding from umbilical stump and intracranial hemorrhage, Prothrombin time is prolonged. What is the most probable deficiency?
A) Vitamin B6 B) Vitamin C C) Vitamin K D) Vitamin D
15. A neonate has hypoglycemia, hyperalaninemia and poor gluconeogenesis. Which enzyme is most likely deficient?
A) Isocitrate dehydrogenase
B) Fumarase
C) Pyruvate carboxylase
D) Aconitase
16. Which vitamin acts as a coenzyme for the transketolase enzyme in the HMP shunt?
A) Vitamin B6
B) Thiamine
C) Niacin
D) Reutilization of ketone bodies
17. Binding of 2, 3-DPG to haemoglobin increases in all condition EXCEPT:
A) High altitude
B) Obstructive pulmonary disease
C) Anemia
D) Fetal circulation
18. A patient on isoniazid therapy for tuberculosis develops seizures and peripheral neuropathy, What supplementation is required?
A) Vitamin B6
B) Vitamin B1
C) Vitamin B2
D) Vitamin C
19. Which of the following is not the substrate for electron transport chain?
A) NADH
B) NADPH
C) FADH2
D) None of the above
20. Adiponectin function includes: Measuring the levels of the following is used to distinguish insulin secreted endogenously from insulin administered exogenously.
A) Decreasing insulin sensitivity
B) Increasing inflammation
C) Increasing insulin sensitivity
D) Promoting lipogenesis

M.B.B.S. DEGREE EXAMINATION

(For the candidates admitted from the Academic Year 2022 – 2023 & 2023 – 2024)

FIRST PROFESSIONAL – (CBME)

PAPER I – BIOCHEMISTRY

Q.P. Code: 526055

Time: 20 Minutes

Maximum : 20 Marks

Answer All Questions

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

SET - B

III. Multiple Choice Questions:

(20 x 1 = 20)

1. In fructose intolerance, enzyme deficient is:
A) Aldolase A B) Aldolase B C) Fructokinase D) Fructose 6 phosphatase
2. A competitive inhibitor:
A) Binds to an allosteric site B) Lowers V_{max} but not K_m
C) Increases K_m but not V_{max} D) Has no effect on either K_m or V_{max}
3. Beta glycosidic bond is present in
A) Starch B) Heparin C) Glycogen D) Lactose
4. Which step of TCA cycle is responsible for substrate level phosphorylation?
A) Citrate to isocitrate B) Succinyl CoA to succinate
C) α-ketoglutarate to succinyl CoA D) Oxaloacetate to citrate
5. Deficiency of Lipoprotein lipase and apo C-II causes:
A) Type I hyperlipidemia B) Type II hyperlipidemia
C) Type III hyperlipidemia D) Type V hyperlipidemia
6. A 1-year-old child presents with hepatosplenomegaly, developmental delay, hypotonia and a cherry-red spot on the macula. Bone marrow biopsy shows foamy macrophages. What is the most likely diagnosis?
A) Gaucher disease B) Hurler syndrome
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7. All the following are metallo-enzymes, EXCEPT:
A) Xanthine oxidase B) Hexokinase
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8. The anti-oxidant function of vitamin E is potentiated by:
A) Zinc B) Copper
C) Magnesium D) Selenium
9. Elevated levels of one of the following enzymes serves as a marker of chronic alcoholism:
A) Alkaline phosphatase B) Gamma-glutamyl-transferase
C) Alanine transaminase D) Aspartate transaminase

...2...

10. An infant develops bleeding from umbilical stump and intracranial hemorrhage, Prothrombin time is prolonged. What is the most probable deficiency?
A) Vitamin B6 B) Vitamin C C) Vitamin K D) Vitamin D
11. A neonate has hypoglycemia, hyperalaninemia and poor gluconeogenesis. Which enzyme is most likely deficient?
A) Isocitrate dehydrogenase B) Fumarase
C) Pyruvate carboxylase D) Aconitase
12. Which vitamin acts as a coenzyme for the transketolase enzyme in the HMP shunt?
A) Vitamin B6 B) Thiamine
C) Niacin D) Reutilization of ketone bodies
13. Binding of 2, 3-DPG to haemoglobin increases in all condition EXCEPT:
A) High altitude B) Obstructive pulmonary disease
C) Anemia D) Fetal circulation
14. A patient on isoniazid therapy for tuberculosis develops seizures and peripheral neuropathy, What supplementation is required?
A) Vitamin B6 B) Vitamin B1
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15. Which of the following is not the substrate for electron transport chain?
A) NADH B) NADPH
C) FADH2 D) None of the above
16. Adiponectin function includes: Measuring the levels of the following is used to distinguish insulin secreted endogenously from insulin administered exogenously.
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20. Which of the following biochemical parameter serves as a predictor of progressive renal damage
A) Microalbuminuria B) Glycated haemoglobin C) Ketonuria D) Hyperlipidemia

M.B.B.S. DEGREE EXAMINATION

(For the candidates admitted from the Academic Year 2022 – 2023 & 2023 – 2024)

FIRST PROFESSIONAL – (CBME)

PAPER I – BIOCHEMISTRY

Q.P. Code: 526055

Time: 20 Minutes

Maximum : 20 Marks

Answer All Questions

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

SET - C

III. Multiple Choice Questions:

(20 x 1 = 20)

1. A neonate has hypoglycemia, hyperalaninemia and poor gluconeogenesis. Which enzyme is most likely deficient?
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PAPER I – BIOCHEMISTRY

Q.P. Code: 526055

Time: 20 Minutes

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SET - D

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