M.B.B.S. DEGREE EXAMINATION
FIRST YEAR
PAPER II – BIOCHEMISTRY

MULTIPLE CHOICE QUESTIONS

Q.P. Code: 526056

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. Which amino acid hydroxylation require iron?

A) Proline.
B) Tyrosine.
C) Cysteine.
D) Leucine.

2. Which of the following analyte analysis require fasting specimen?

A) Serum Uric Acid.
B) Serum Alkaline Phosphatase.
C) Serum Triglycerides.
D) Serum Protein.

3. The following ions can be quantitatively analyzed using flame photo meter EXCEPT

A) Sodium.
B) Lithium.
C) Calcium.
D) Cadmium.

4. Which of the following hormones uses cAMP as second messenger?

A) Glucagon.
B) Atrial Natriuretic Peptide.
C) Insulin.
D) Estrogen.

5. Which of the following syndrome has primary hyper aldosteronism?

A) Down syndrome.
B) Gilbert syndrome.
C) Conn’s syndrome.
D) Cushing syndrome.

6. Which of the following enzymes uses selenium as cofactor?

A) Hexokinase.
B) Transaminase.
C) Ferrochelatase.
D) 5’ Deiodinase.

7. Which of the following is nonheme iron containing protein?

A) Cytochrome C_1.
B) Catalase.
C) Nitric Oxide Synthase.
D) Transferrin.

8. The following anti oxidants are used commercially in food industry EXCEPT

A) Butylated Hydroxy Toluene (BHT).
B) Butylated Hydroxy Anisole (BHA).
C) Vitamin – E.
D) Vitamin – A.

9. In which organelle does the Aldehyde Dehydrogenase produces the toxic Acetaldehyde

A) Cytosol.
B) Endoplasmic Reticulum.
C) Mitochondria.
D) Membrane of the Cell.

10. Care should be taken while correcting metabolic acidosis to prevent sudden

A) Hyperkalemia.
B) Hypokalemia.
C) Hyponatremia.
D) Hypernatremia.

11. High anion gap metabolic acidosis occurs in all of the following conditions EXCEPT

A) Lactic Acidosis.
B) Diabetic Keto Acidosis.
C) Renal Tubular Acidosis.
D) Salicylate Poisoning

12. Diagnostic criteria for [SIADH- Syndrome of inappropriate anti diuretic hormone secretion] include all, EXCEPT

A) Hyponatremia (<135mmol/L).
B) Urine Sodium (>20 mmol/L).
C) Urine Osmolality (>100 mOsm/kg).
D) Increased Plasma Osmolality.

13. Post-transcriptional processing of primary transcript mRNA does not include

A) Poly A – tailing.
B) 5’ Capping.
C) Removal of Introns.
D) Proof Reading.

14. Mushroom toxin – Amanitin blocks the enzyme

A) DNA Polymerase.
B) RNA Polymerase - II.
C) RNA Polymerase- I.
D) RNA Polymerase - III.

15. Anticancer agent methotrexate inhibits the enzyme

A) Thio Redoxin Reductase.
B) Dihydro Folate Reductase.
C) Ribonucleotide Reductase.
D) Thimydylate Synthase.

16. Enzyme involved in the purine salvage pathway is

A) Adenine Phospho Ribosyl Transferase.
B) Phosphor Ribosyl Amidotransferase.
C) Glycinamide Ribonucleotide Synthetase.
D) Phospho Ribosyl Synthase.

17. HHH Syndrome includes the following EXCEPT

A) Homocitrullinuria.
B) Hyperornithinemia.
C) Hypo Uricemia.
D) Hyperammonemia.

18. The first line of defense for trapping Ammonia is conversion of

A) Glutamate to Glutamine.
B) Urea Synthesis.
C) Glycine to Glutathione.
D) Serine to glycine.

19. Factors causing decreased absorption of calcium include the following EXCEPT

A) Parathyroid hormone.
B) Phytic acid.
C) Oxalates.
D) Phosphates.

20. Which of the following is a Ferroxidase?

A) Hemosiderin.
B) Ferritin.
C) C Reactive Protein.
D) Ceruloplasmin.

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[MBBS 0821] AUGUST 2021 **Sub.Code :6056**

MAY 2021 SUPPLEMENTRY

M.B.B.S. DEGREE EXAMINATION
FIRST YEAR
PAPER II – BIOCHEMISTRY

MULTIPLE CHOICE QUESTIONS

Q.P. Code: 526056

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. Which hormone acts by binding to intracellular receptors?

A) Glucagon.
B) Calcitonin.
C) Estrogen.
D) Oxytocin.

2. The protein responsible for the transport of iron across the mucosal cell is

A) Hepcidin.
B) Transferrin.
C) Ferroportin.
D) Hemojuvelin.

3. Which of the following instrument uses the property of absorption for measuring the analyte concentration?

A) Flame photometer.
B) pH meter.
C) Colorimeter.
D) Luminometer.

4. Amino acids are visualized by staining with which of the following agent in paper chromatography

A) Ninhydrin.
B) Sulfuric Acid.
C) Diphenylamine.
D) Oil-Red-O.

5. Which of the following hormone acts through cell surface receptor B+ by activating Tyrosine kinase?

A) Somatostatin.
B) Adrenaline.
C) Nitric Oxide.
D) Insulin.

6. Which of the following causes hypouricemia?

A) Deficiency of phosphoribosyl amidotransferase.
B) Deficiency of glucose 6 phosphatase.
C) Deficiency of adenosine deaminase.
D) Deficiency of adenosine phosphor ribosyl transferase.

7. Which of the following pituitary hormone is a glycoprotein?

A) Growth hormone.
B) Follicle stimulating hormone.
C) Adeno corticotropic hormone.
D) Protein.

8. Which of the following mineral deficiency causes Acrodermatitis enteropathica?

A) Copper.
B) Chromium.
C) Zinc.
D) Manganese.

9. Which of the following is involved in detoxication process?

A) Transaminases.
B) Dehydrogenases.
C) Cytochrome P450 enzymes.
D) Decarboxylases.

10. Which amino acid produces putrescine by bacterial metabolism in intestine?

A) Histidine.
B) Ornithine.
C) Tryptophan.
D) Lysine.

11. Which of the following is not a feature of Conn's syndrome?

A) Elevated plasma aldosterone.
B) Decreased plasma rennin.
C) Hypernatremia.
D) Decreased plasma pH.

12. The constituents for calculating the osmolal gap include the following EXCEPT

A) Sodium.
B) Potassium.
C) Glucose.
D) Urea.

13. Which among the following is not a phase two detoxification reaction?

A) Methylation.
B) Acetylation.
C) Conjugation.
D) Hydrolysis.

14. Inhibitors of Renin – Angiotensin system include all of the following EXCEPT

A) Increased blood pressure.
B) Decrease blood pressure.
C) Salt intake.
D) Angiotensin – II.

15. Southern blot technique is used to identify

A) Specific sequences of DNA.
B) Specific sequences of RNA.
C) Specific sequences of Protein.
D) Specific RNA – Protein Interaction.

16. Transcription is catalyzed by

A) DNA dependent RNA polymerase.
B) RNA dependent DNA polymerase.
C) Reverse Transcriptase.
D) DNA Ligases.

17. Orotic aciduria is due to the deficiency of the enzyme

A) Dihydro orotase.
B) Dihydro orotate dehydrogenase.
C) Orotidine mono phosphate decarboxylase.
D) Uridine mono phosphate kinase.

18. Secondary hyper uricemia is due to

A) Abnormal PRPP synthetase.
B) Glucose 6 – phosphatase deficiency.
C) Glutathione reductase variant.
D) Rapidly growing malignant tissues like – Leukemia, Lymphoma.

19. Hartnup's disease is associated to

A) Carcinoid tumours.
B) Defective replete of bilirubin.
C) Defective absorption of aromatic acids.
D) Defective absorption of minerals.

20. Maple Syrup Urine Disease (MSUD) is due with defect in _____ of branched chain amino acid

A) Acetylation.
B) Decarboxylation.
C) Methylation.
D) Hydroxylation.

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

[MBBS 0222] FEBRUARY 2022 **Sub.Code : 6056**

M.B.B.S. DEGREE EXAMINATION
(For the candidates admitted from the Academic Year 2019-2020)
FIRST YEAR
PAPER II – BIOCHEMISTRY

MULTIPLE CHOICE QUESTIONS

Q.P. Code: 526056

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.

III. Multiple Choice Questions: **(20 x 1 = 20)**

1. Normal blood calcium level is
   A. 5 – 7 mg/dl
   B. 7 – 9 mg/dl
   C. 9 – 11 mg /dl
   D. 11 – 13 mg /dl

2. Which is attached to 3’ (prime) end of mRNA after transcription
   A. Poly A tail.
   B. CCA sequence.
   C. 7 – Methylguanosine.
   D. Intron.

3. Among the following the most sensitive indicator of glomerular function is
   A. Serum urea.
   B. Serum creatinine.
   C. Urea clearance.
   D. Creatinine clearance.

4. Albinism is due to deficiency of which enzyme
   A. Tyrosinase.
   B. Tyrosine hydroxylase.
   C. Phenylalanine hydroxylase.
   D. Homogentisate oxidase.

5. Which enzyme deficiency causes LESCH NYHAN SYNDROME
   A. Transcarboxylase.
   B. HGPRTase.
   C. Glutaminase.
   D. PRPP synthetase.

6. Which is Nucleotide
   A. Nitrogenous base + Sugar.
   B. Nitrogenous base + Phosphate.
   C. Nucleoside + Phosphate.
   D. Nucleoside + sugar.

7. The aminoacid from which niacin is synthesized is
   A. Tryptophan.
   B. Tyrosine.
   C. Threonine.
   D. Histidine.

8. Phenyl butyrate is used in urea cycle disorders because it ?
   A. Activates enzymes.
   B. Maintains renal output.
   C. Maintains energy level.
   D. Increases renal excretion of Ammonia.

9. Which of the following proteins are abundant in the exracellular matrix?
   A. Actin.
   B. Myosin.
   C. Tubulin.
   D. Collagen.

10. Glycine is used for synthesis of all the following compounds except
   A. Heme.
   B. Creatinine.
   C. Purine ring.
   D. Pyrimidine ring.

11. Keshan's disease is due to deficiency of
   A. Chromium.
   B. Selenium.
   C. Magnesium.
   D. Copper.

12. In acute pancreatitis, the activity of the following enzyme in plasma is specifically elevated
   A. Alanine aminotransferase.
   B. Aspartate aminotransferase.
   C. Amylase.
   D. Creatine kinase.

13. Which of the following is not a nutritionally essential aminoacids for humans ?
   A. Leucine.
   B. Tryptophan.
   C. Tyrosine.
   D. Methionine.

14. Which of the following is a structural component of RNA but not of DNA ?
   A. Adenine.
   B. Uracil.
   C. Guanine.
   D. Thymine.

15. Ehler-Danlos syndrome characterized by hypermobile joints and skin abnormalities is due to
    A. Abnormality in gene for procollagen.
    B. Defect of elastase.
    C. Deficiency of prolyl hydroxylase.
    D. Deficiency of lysyl hydroxylase.

16. GABA (Gamma amino butyric acid) is
    A. Post synaptic excitatory transmitter.
    B. Post synaptic inhibitory transmitter.
    C. Activator of glia cell formation.
    D. Inhibitor of glia cell formation.

17. Which of the following is initiator codon for Translation ?
    A. UAA.
    B. UAG.
    C. AUG.
    D. UGA.

18. Casein, the milk protein is
    A. Nucleoprotein.
    B. Chromoprotein.
    C. Phosphoprotein.
    D. Glycoprotein.

19. Which of the following is the inhibitor of Thymidilate synthase enzyme ?
    A. Methotrexate.
    B. Allopurinol.
    C. 5 – Fluorouracil.
    D. Hydroxy urea.

20. At isoelectric pH, the proteins show
    A. Maximum net charge.
    B. Maximum mobility in electric field.
    C. Maximum precipitability.
    D. Minimum buffering action.

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

[MBBS 0222] **MAY 2022** **Sub. Code :6056**

M.B.B.S. DEGREE EXAMINATION

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

FIRST YEAR – SUPPLEMENTARY (CBME)

PAPER II – BIOCHEMISTRY

MULTIPLE CHOICE QUESTIONS

Q.P. Code: 526056

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.

III. Multiple Choice Questions: **(20 x 1 = 20)**

1. Ketogenic amino acid is
   A. Valine.
   B. Cysteine.
   C. Leucine.
   D. Threonine.

2. Nitric oxide is synthesized from
   A. Tyrosine.
   B. Arginine.
   C. Histidine.
   D. Cysteine.

3. The cDNA is prepared by using the enzyme
   A. RNA polymerase.
   B. DNA polymerase.
   C. Reverse transcriptase.
   D. Restriction endonuclease.

4. Melatonin is synthesized from
   A. Tyrosine.
   B. Tryptophan.
   C. Threonine.
   D. Glycine.

5. Normal blood pH is
   A. 6.8 - 7
   B. 7 - 7.12
   C. 7.35 - 7.45
   D. 7.5 – 7.9

6. Which of the following is not a nucleoside?
    A. Adenosine.
    B. Cytosine.
    C. Guanosine.
    D. Xanthosine.

7. Burnt sugar urine odour is seen in
    A. Phenylketonuria.
    B. Multiple carboxylase deficiency.
    C. Diabetic ketoacidosis.
    D. Maple syrup urine disease.

8. Aminoacid carrier defect found in
    A. Maple syrup urine disease.
    B. Alkaptonuria.
    C. Phenylketonuria.
    D. Cystinuria.

9. Stop codons are following except
    A. UGA.
    B. UAA.
    C. UAU.
    D. UAG.

10. Aspartic acid is used for the synthesis of which compound ?
    A. Porphyrin.
    B. Sphingomyelin.
    C. Pyrimidine.
    D. Folic acid.

11. All are transport proteins of blood except
    A. Albumin.
    B. Transcortin.
    C. Transferrin.
    D. Ferritin

12. In which of the following molecule could you find an anti codon ?
    A. rRNA.
    B. tRNA.
    C. mRNA.
    D. SnRNA.

13. Which enzyme protects DNA from aging ?
    A. DNA polymerase.
    B. Topoisomerase.
    C. Deoxyribonuclease.
    D. Telomerase.

14. Histone acetylation causes
    A. Increased heterochromatin formation.
    B. DNA replication.
    C. Methylation of cytosine.
    D. Increased euchromatin formation.

15. Most common cause of Homocystinuria is a defect in the enzyme
    A. Cystathionine synthase.
    B. Methionine adenosyltransferase.
    C. Methyl transferase.
    D. SAH Hydrolase.

16. If one aminoacid is coded by more than one triplet, then this is known as
    A. Degeneracy.
    B. Frame-shift mutation.
    C. Specificity.
    D. Universality.

17. Alpha fetoprotein level in serum is increased in
    A. prostate cancer.
    B. Hepatoma.
    C. Cancer lung.
    D. Choriocarcinoma.

18. In pheochromocytoma, true is the excessive urinary excretion of
    A. Vanillylmandelic acid.
    B. Polyamines.
    C. Hippuric acid.
    D. 5 – Hydroxyindole acetic acid.

19. Which polymerase is involved in transcribing mRNA ?
    A. RNA polymerase I
    B. RNA polymerase II
    C. RNA polymerase III
    D. DNA polymerase I

20. Daily requirement of zinc for adult male is
    A. 1 mg
    B. 10 mg
    C. 100 mg
    D. 1000 mg

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

[MBBS 0123] **JANUARY 2023** **Sub. Code :6056**

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

FIRST YEAR – (CBME)
PAPER II – BIOCHEMISTRY

Q.P. Code: 526056

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. The thyroid hormones T_3 and T_4 are synthesized in the follicular cells of the thyroid gland. From which of the following essential amino acids are the thyroid hormones synthesized?
   A) Isoleucine B) Lysine C) Methionine D) Phenylalanine

2. A 5-year-old mentally retarded child is seen by an ophthalmologist for ''blurry vision.'' Ocular examination demonstrates bilateral lens dislocations, and further workup is significant for osteoporosis and homocystinuria. Serum analysis would most likely show an elevation of which of the following substances?
   A) Cystathionine B) Valine C) Phenylalanine D) Methionine

3. A 11 year old boy presented with a massive elevation of AFP. He has had recurrent episodes of jaundice since birth. At the age of 9, he was diagnosed with porphyria. His urine shows high succinylacetone. What is your diagnosis?
   A) Type I Tyrosinemia B) Alkaptonuria
   C) Hawkinsinuria D) Type II Tyrosinemia

4. A 20 year old boy with severe mental retardation, mousy odour in body fluids, hypopigmentation. Patient has frequent episodes of seizures and aggressive behaviour. What is your diagnosis?
   A) Tyrosinemia B) Albinism
   C) Maple Syrup Urine Disease (MSUD) D) Untreated Phenylketonuria (PKU)

5. All of the following are purine bases except
   A) Adenine B) Uric acid C) Hypoxanthine D) Uracil

6. The linkage present in a nucleoside is
   A) α N glycosidic linkage B) β N glycosidic linkage
   C) Phosphoester linkage D) Acid anhydride linkage

7. Regarding DNA structure true is,
   A) The double helical structure is stabilised by covalent bonds
   B) The individual strands are stabilized by 5'3' phosphodiester linkage
   C) The individual strands are stabilized by 3'5' phosphodiester linkage
   D) The term 5' end indicates that the 5' end is linked to kinetochore

8. Denaturation of DNA is done by all except,
   A) Increasing the temperature B) Increasing the salt concentration
   C) Decreasing the salt concentration D) Formamide

9. All the following are causes of hyperuricemia except
   A) PRPP synthetase low activity B) HGPRTase defect
   C) Von Gierke's disease D) High activity of PRPP amido transferase

10. Mismatch repair defect causes
   A) Hereditary Non Polyposis Colon Cancer (HNPCC)
   B) Xeroderma pigmentosa
   C) Fanconi's anemia
   D) Ataxia Telangiectasia

11. A 50-year-old woman complains of feeling warm all of the time. Her eyes appear as though they are ''bulging out of their sockets'' (proptosis). She sees a family physician to evaluate her condition. Laboratory tests demonstrate a decreased level of TSH. Which of the following would you expect in this patient?
   A) Reduced blood pressure B) Weight gain
   C) Increased basal metabolic rate D) Reduced heart rate

12. Post transcriptional modification of mRNA include all except
   A) 7- methyl guanosine capping B) Poly A tail
   B) Complete removal of introns D) RNA editing

13. Codon consists of:
   A) 3 base pairs B) 2 base pairs C) 5 base pairs D) 3 nucleotides

14. In the serum protein electrophoresis, all the following proteins are found in the $\alpha_2$band except
   A) Macroglobulin B) Ceruloplasmin C) Haptoglobin D) Antitrypsin

15. Which is true about recombinant DNA technology?
   A) It requires taq DNA polymerase B) It is an invitro cloning process
   C) It requires a vector D) The equipment required is thermocycler

16. Diphtheria toxin inhibits
   A) IF1A B) EF1A C) IF2C D) EF2

17. The acid base status of a blood sample that was taken from a person, who was acutely hysterical was: Blood pH : 7.55, pCO_2 : 20 mmHg, Plasma HCO_3 : 20 mEq/L. What is the acid base disorder in this patient?
   A) Respiratory acidosis B) Respiratory alkalosis
   C) Metabolic acidosis D) Metabolic alkalosis

18. Which is a reverse transcriptase
   A) Topoisomerase B) Telomerase
   C) RNA polymerase I D) DNA polymerase alpha

19. Which of the following techniques is used for the detection of variation in DNA sequence
   A) Northern blot B) Southern blot
   B) Western blot D) All of the above

20. Glutamine in blood act as
   A) NH_3 transporter B) Toxic element
   C) Stored energy D) Abnormal metabolite.

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

[MBBS 0323] **MARCH 2023** **Sub. Code :6056**

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

FIRST YEAR – SUPPLEMENTARY (CBME)
PAPER II – BIOCHEMISTRY

Q.P. Code: 526056

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 the following are specialized products obtained from tyrosine except :
   A) Dopamine B) Melanin C) Epinephrine D) Serotonin

2. Type II Tyrosinemia is characterized by all except :
   A) Palmar hyperkeratosis B) Corneal ulcer
   C) Porphyria D) Oculocutaneous syndrome

3. The histone that is not present is a nucleosome is
   A) H1 B) H2A C) H2B D) H3

4. The left handed helix is seen in,
   A) B DNA B) Z DNA C) A DNA D) E DNA

5. C2 of purine ring is donated by
   A) N5, N10 methylene THFA B) N10 formyl THFA
   C) N5, N10 methenyl THFA D) Carbon dioxide

6. The most common error in a DNA is
   A) Base Excision B) Pyrimidine dimer C) Mismatch D) Ds DNA break

7. Regarding transcription true is,
   A) The two strands of DNA are transcribed simultaneously
   B) RNA primer is first formed
   C) RNA polymerase needs the template strand in 5’ to 3’ direction
   D) RNA polymerase synthesise the primary transcript in 5’ to 3’ direction

8. A 56-year-old man with long-standing, poorly controlled diabetes who was hospitalized, experienced an episode of acute renal failure while in the hospital, and his creatinine level rose to 3.4 mg/dL.Creatinine, a marker of kidney function, is produced from which of the following precursors?
   A) Glutamine, cysteine, and glycine B) Serine and palmityl CoA
   C) Glycine and succinyl CoA D) Glycine, arginine, and SAM

9. Thyroid hormones cause all except:
   A) Decreases cholesterol level B) Decreases plasma glucose
   C) Negative nitrogen balance D) Vitamin utilization

10. apo B 48 formation is an example of
    A) Truncation of protein B) RNA editing
    C) Rearrangement of glycosidic bond D) Modification by methylation

11. Stop codon:
    A) UAG B) UCA C) UAC D) AUG

12. The amino acid which does not follow degeneracy of codon is,
    A) Glycine B) Glutamine C) Tryptophan D) Tyrosine

13. All the following are the tools required for recombinant DNA technology except?
    A) Restriction endonucleases B) Blotting C) Thermocycler D) Vector

14. A 4-yearold boy of a first-degree consanguineous couple was noted by the parents to have darkening of the urine to an almost black color when it was left standing. Which of the following is most likely to be elevated in this patient?
    A) Methylmalonate B) Homogentisate C) Phenylpyruvate D) Homocysteine

15. A 42-year-old male patient undergoing radiation therapy for prostate cancer develops severe pain in the metatarsal phalangeal joint of his right big toe. Monosodiumurate crystals are detected by polarized light microscopy in fluid obtained from this joint by arthrocentesis. Uric acid crystals are present in his urine. This patient's pain is directly caused by the over production of the end product of which of the following metabolic pathways?
    A) Pyrimidinedegradation B) De novo purinebiosynthesis.
    C) Purinesalvage D) Purinedegradation

16. The extent of DNA synthesis in a cell could most specifically be determined by measuring the incorporation of radio labeled:
    A) Phosphate B) ribose C) thymidine D) uracil

17. An infant presents with neonatal jaundice. After several weeks, the jaundice becomes more exaggerated. The patient has an enzyme deficiency that inhibits conjugation of bilirubin. Which of the following reacts with bilirubin in the conjugation reaction?
    A) Vitamin C B) Iron C) Ceruloplasmin D) UDP-glucuronate

18. A 26-year-old woman meets with her family physician to discuss family planning. She is interested in starting a family soon and is looking for advice on what nutritional supplements would be beneficial during pregnancy. The physician suggests which two of the following supplements as being the most important for the health of the fetus?
    A) Selenium and vitamin K B) Copper and riboflavin
    C) Iron and folate D) Vitamin C and vitamin D

19. Enzymes that catalyze antioxidant reactions are the following except:
    A) Glutathione peroxidise B) Glutathione reductase
    C) Superoxide dismutase D) Catalase

20. A tumor-suppressor gene is best described by which one of the following?
    A) A gain-of-function mutation leads to uncontrolled proliferation
    B) A loss-of-function mutation leads to uncontrolled proliferation
    C) When it is expressed, the gene specifically blocks the G_1/S checkpoint.
    D) When it is expressed, the gene induces tumor formation.

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

[MBBS 1123] NOVEMBER 2023 Sub. Code :6056

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

FIRST YEAR – (CBME)
PAPER II – BIOCHEMISTRY

Q.P. Code: 526056

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. To which of the following structures in a typical molecule of tRNA is an aminoacid attached?
   A)Variable loop B) Anti Codon loop C) D – loop D) CCA tail

2. Daily requirement of iodine for an adult is
   A)15 – 20 µg B) 150 – 200 µg C) 300 – 400 µg D) 400 – 500 µg

3. All are inhibitors of RNA synthesis except
   A) Rifampicin B) Puromycin C) Amanitin D) Actinomycin D

4. In prokaryotes DNA replication is inhibited by what drug?
   A) Chloramphenicol B) Rifamycin C) Ciprofloxacin D) Streptomycin

5. Which immunoglobulin can cross placental barrier?
   A) IgG B) IgM C) IgA D) IgD

6. Orotic aciduria is due to deficiency of which enzyme?
   A) Carbamoyl phosphate synthetase II B) Aspartate transcarbomylase.
   C) Dihydrooratase D) Orotatephophoribosyltransferase

7. All following are substrates for transmethylation reactions except
   A) Guanidoacetic acid B) Choline C) Norepinephrine D) N acetylserotonin

8. Which is the radio isotope used for measuring nucleic acid synthesis?
   A) ^{51}Cr B) ^{131}I C) ^{32}P D) ^{14}C

9. Wilson's disease is due to abnormal metabolism of following mineral
   A) Manganese B) Copper C) Zinc D) Selenium

10. What is the most common environmental poison in India?
    A) Aluminium B) Lead C) Mercury D) Arsenic

11. Which of the following test measure GFR accurately?
    A) Creatinine clearance B) Urea clearance
    C) Inulin clearance D) PAH clearance

12. Emphysema is due to deficiency of which of the following protein?
    A) C- Reactive protein B) Alpha – 1 Antitrypsin.
    C) Ceruloplasmin D) Alpha – 2 Macroglobulin

13. Crigler – Najjar syndrome is due to deficiency of which enzyme?
    A) UDP – Glucoronyltransferase B) Bilirubin reductase
    C) Cytochrome oxidase D) Ferrochelatase

14. The pattern of inheritance shown by glucose-6-phosphate dehydrogenase deficiency is
    A) Autosomal dominant B) Autosomal recessive.
    C) X – linked dominant D) X – linked recessive.

15. Which of the following is the basis for the intestine specific expression of apolipoprotein B – 48 ?
    A) DNA transposition B) RNA Alternative splicing
    C) RNA editing D) RNA interference

16. Which of the following is true with regards to p53?
    A) It is an oncogene B) It is an oncosuppressor gene
    C) It is an inducer of heme synthesis D) It is deleted in mental retardation

17. Which of the following is the major intracellular mineral
    A) Magnesium B) Potassium C) Sodium D) Calcium

18. Which of the following is an example of phase two detoxification?
    A) Hydrolysis B) Conjugation C) Reduction D) Dealkylation

19. Among the following, all are hormones that act on cytosolic receptor except
    A) Thyroxine B) Epinephrine C) Glucagon D) Insulin

20. Which of the following is not an emergency investigation?
    A) Potassium B) Fasting glucose C) Creatinine D) Calcium

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[MBBS 1123]

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

[MBBS 0124] **JANUARY 2024** **Sub. Code :6056**

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

FIRST YEAR – SUPPLEMENTARY (CBME)
PAPER II – BIOCHEMISTRY

Q.P. Code: 526056

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. Give your opinion regarding the acid base status of a blood sample that was taken from a person, who was acutely hysterical?

   Blood pH : 7.55
   pCO_2 : 20 mmHG
   Plasma HCO_3 : 20 mEq/L

   A) Respiratory acidosis B) Respiratory alkalosis
   C) Metabolic acidosis D) Metabolic alkalosis

2. The most used plasmid vector is:
   A) pBR322 B) pUC19 C) pCEV D) pUC18

3. Lac A in lac operon codes for
   A) Beta galactosidase B) Lactose permease
   C) Thiogalactosyl transacetylase D) Isopropyl thiogalactosyl pyranoside

4. The amino acid is attached to which arm of tRNA
   A) D arm B) TΨ C arm C) Acceptor arm D) Anticodon arm

5. apo B 48 formation is an example of
   A) Truncation of protein B) RNA editing
   C) Rearrangement of glycosidic bond D) Modification by methylation

6. All of the following are sources of glycine except:
   A) Glycine cleavage system B) Serine
   C) Threonine D) Cysteine

7. Tryptophan acts as a source of:
   A) N10 formyl THFA B) N5, N10 methylene THFA
   C) N5, N10 methenyl THFA D) N5 formyl THFA

8. FIGLU Test is done after a load of
   A) Histidine B) Tryptophan C) Tyrosine D) Phenylalanine

9. The DNA polymerase which helps in mitochondrial DNA synthesis is
   A) DNA polymerase α B) DNA polymerase β
   C) DNA polymerase γ D) DNA polymerase δ

10. The concentration of inulin in urine is 35mg/ml and that of plasma is 0.25mg/ml. The 24 hrs urine volume is 1440ml. Calculate the GFR
    A) 125 ml/min B) 140 ml/min C) 250 ml/min D) 180 ml/min

11. Menke's disease is caused by the defect of
    A) ATP7A B) ATP7B C) ABCA1 D) ABCB1

12. Fidelity of gene is conferred by
    A) Peptidyl transferase B) Cytidine deaminase
    C) Inosine deaminase D) Aminoacyl tRNA synthetase

13. The template strand is GGCTATAT. What is the RNA sequence?
    A) ATATAGCC B) CCGATATA C) CCGATATT D) TTATAGCC

14. The Histone that is not present in a nucleosome is
    A) H1 B) H2A C) H2B D) H3

15. Which of the following is true about eukaryotic replication?
    A) Conservative process
    B) Requires a 5'3' strand to act as a template
    C) Associated with telomeric end shortening
    D) Unidirectional

16. Nitric oxide is synthesized from
    A) Arginine B) Tryptophan C) Tyrosine D) Histidine

17. Alpha helix is stabilized by
    A) Ionic interaction B) Vander Waal's forces
    C) Hydrogen bond D) Covalent linkage

18. Which of the following amino acids is responsible for UV absorbance at 280nm?
    A) Histidine B) Glycine C) Threonine D) Tryptophan

19. Histidine answers
    A) Xanthoproteic acid test B) Aldehyde test
    C) Millon's test D) Pauly's test.

20. True about Glutathione is
    A) It has two true peptide linkages B) It has three true peptide linkages
    C) It has two aminoacids D) It has three aminoacids.

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[MBBS 0124]

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

[MBBS 0824] **AUGUST 2024** **Sub. Code :6056**

M.B.B.S. DEGREE EXAMINATION
(For the candidates admitted from the Academic Year 2020 -2021 Onwards)

FIRST YEAR – (CBME)
PAPER II – BIOCHEMISTRY

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. All of the following are Examples for Fibrous proteins, except
   A) Albumin B) Collagen C) Elastin D) Keratin

2. The drug that inhibits HMG-CoA reductase is
   A) Lovastatin B) Sulphonamide C) Methotrexate D) Allopurinol

3. Citrullinemia results due to deficiency of
   A) Arginosuccinate synthetase B) Carbamoyl phosphate synthetase II deficiency
   C) Ornithine Transporter defect D) Ornithine Transcarbamoylase deficiency

4. Transmethylation of Carnosine results in formation of
   A) Anserine B) Choline C) Epinephrine D) Melatonin

5. Decarboxylation of Lysine results in formation of
   A) Cadaverine B) Taurine C) Putrescine D) Serotonin

6. Urine becomes Black on standing in
   A) Phenylketonuria B) Alkaptonuria C) Albinism D) Hawkinsinuria

7. FIGLU excretion test is used to diagnose
   A) Folic acid deficiency B) Hartnup's disease C) Carcinoid tumor D) Albinism

8. Test for Synthetic function of liver is
   A) Prothrombin Time \
   B) Estimation of serum bilirubin
   C) Estimation of serum Alkaline Phosphatase
   D) Estimation of serum gamma glutamyl transferase

9. The test used to assess Tubular function is
   A) Clearance test B) Estimation of Glomerular filtration rate
   C) Measurement of Osmolality D) Estimation of Cystatin C

10. Urinary Osmolality is normal in
   A) Central Diabetes Insipidus B) Osmotic Diuresis
   C) Nephrogenic Diabetes Insipidus D) Compulsive water drinking

11. The Electrophoretic pattern in Multiple Myeloma is
    A) Prominent Alpha 2 fraction B) Prominent M band
    C) Fused Beta and Gamma fraction D) Increased Gamma globulins

12. All of the following are the examples of Chain breaking Antioxidants, except
    A) Catalase B) Superoxide Dismutase C) Alpha Tocopherol D) Uric acid

13. Alzheimer's disease is due to
    A) Mercury poisoning B) Aluminium toxicity
    C) Organophosphorus poisoning D) Lead poisoning

14. The source of N3 and N9 for synthesis of Purine nucleotide is
    A) Aspartic acid B) Glycine C) Glutamine D) Glutamate

15. The inhibitor of DNA replication acting on Human Topoisomerase is
    A) Adriamycin B) Ciprofloxacin C) 5-Flurouracil D) Nalidixic acid

16. The irreversible post translational modifications are
    A) Proteolysis B) Glycosylation C) Phosphorylation D) Acylation

17. The hormone of Gastro intestinal tract having Ghrelin opposing action is
    A) Gastrin B) Secretin C) Encephalin D) Obestatin

18. The immunoglobulin mediating Anaphylaxis is
    A) IgA B) IgE C) IgM D) IgG

19. The human oncogenic virus associated with Kaposi Sarcoma is
    A) Hepatitis B virus B) Ebstein Barr Virus
    C) Human papilloma virus D) Human immunodeficiency virus

20. The tumor marker elevated in serum of patients with Medullary Thyroid Carcinoma is
    A) Carcino Embryogenic Antigen B) Neuron Specific Enolase
    C) Beta HCG D) Calcitonin

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

[MBBS 0924] **SEPTEMBER 2024** **Sub. Code :6056**

M.B.B.S. DEGREE EXAMINATION
(For the candidates admitted from the Academic Year 2020 -2021 Onwards)

FIRST PROFESSIONAL – (CBME) - SUPPLEMENTARY
PAPER II – BIOCHEMISTRY

Q.P. Code: 526056

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 most common form of DNA is,
   A) B DNA B) Z DNA C) A DNA D) E DNA

2. The features of B DNA include, all EXCEPT
   A) It is a right-handed helix
   B) One full turn of DNA has 10 nucleotides and measure $34A^0$, width $20A^0$
   C) Major groove is equal to minor groove in terms of width
   D) It is the form that is present under physiological conditions

3. C2 of pyrimidine ring is donated by
   A) N5, N10 methylene THFA B) N10 formyl THFA
   C) N5, N10 methenyl THFA D) Carbon dioxide

4. Base excision repair is done by
   A) Apurinic endonuclease B) DNA polymerase γ
   C) GATC endonuclease D) Ku helicase

5. Which of the following is best described as being trans-acting?
   A) CAP site B) Operator C) Promoter D) Repressor

6. Amino acids, which carry nitrogen to the liver from peripheral tissues, include
   A) Alanine and glutamine B) Arginine and ornithine
   C) Glutamate and aspartate D) Branched chain amino acids

7. A couple of African American descent gives birth to a boy after an otherwise uneventful pregnancy. The child is exceptionally fair- skinned and has almost white hair. Further examination reveals red pupils. A postnatal screen is likely to confirm the deficiency of which of the following enzymes in the child?
   A) Inducible nitric oxide synthase (iNOS) B) Glutathione reductase
   C) Tyrosinase D) Phenylalanine hydroxylase

8. A 56-year-old woman with no known medical conditions presents to the emergency room with pain in the upper arm. She denies any trauma; however, a fracture of the humerus is found on radiograph. She is found to have an elevated PTH level. Which of the following statements best describes PTH?
   A) It lowers serum calcium
   B) It stimulates the conversion of vitamin D to the active form
   C) It promotes the reabsorption of phosphate from the kidney
   D) It promotes the excretion of calcium from the kidney

9. Methotrexate is often used as a chemotherapeutic agent to treat patients with leukemia. This drug is effective because it inhibits cells in which part of the cell cycle?
   A) G_1 phase B) S phase C) M phase D) G_2 phase

10. The effect of thyroid hormones on CVS includes all EXCEPT:
   A) Decreases peripheral resistance B) Increases heart rate
   C) Increases stroke volume D) Increases diastolic BP

11. The mutation seen in Sickle cell anemia is:
   A) A missense point mutation B) A nonsense point mutation
   C) An insertion D) A frameshift mutation

12. The backbone of a DNA strand is composed of which of the following?
   A) Sugars and bases B) Phosphates and sugar
   C) Bases and phosphates D) Nucleotides and sugars

13. Which of the following enzymes is required to actively enhance the separation of DNA strands during replication?
   A) Helicase B) 3' to 5'exonuclease C) DNA ligase D) Primase

14. Chaperone plays a role in
   A) Increases the activity of inactive protein B) protein folding
   C) Prevent the activity of harmful proteins D) All the above

15. The Kidney contributes to acid-base balance by
   A) production of 25- hydroxycholecalciferol B) Reclamation of bicarbonate
   C) Increased ketogenesis D) Renin – angiotensin synthesis

16. A suppressed TSH and raised free T3 and T4 indicate
   A) Thyrotoxicosis B) Myxoedema
   C) Cretinism D) Subclinical Hyperthyroidism

17. The separation of molecules based on their size, is done by
   A) Ion exchange chromatography B) Gel filtration chromatography
   C) Adsorption chromatography D) Affinity chromatography

18. Hartnup's disease is associated with defective absorption of the following amino acid
   A) Tryptophan B) Alanine C) Proline D) Arginine

19. Selenium is a co factor in which of the following enzymes
   A) Glutathione peroxidase B) Cytochrome oxidase
   C) Cytochrome reductase D) Xanthine oxidase

20. All the following conditions leads to hypernatremia EXCEPT
   A) Vomiting and diarrhoea B) Burns
   C) Addison's disease D) Cushing's syndrome.

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

[MBBS 0825] **AUGUST 2025** **Sub. Code: 6056**

M.B.B.S. DEGREE EXAMINATION

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

FIRST PROFESSIONAL – (CBME)

PAPER II – BIOCHEMISTRY

Q.P. Code: 526056

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 aminoacids is purely ketogenic?
   A) Proline B) Phenyl alanine C) Tyrosine D) Leucine

2. In the body, glycine is used for the synthesis of all the following substances, except
   A) Purine ring B) Glutamine C) Glutathione D) Creatine

3. One salient clinical manifestation in homocystinuria is
   A) Agitation, hyperkinesia B) Renal stones
   C) Ectopialentis (Subluxation of lens) D) Nystagmus

4. Hemopexin carries
   A) Free hemoglobin B) Free heme C) Free bilirubin D) Free iron

5. Administration of diuretics cause loss of potassium, which may lead to
   A) Metabolic acidosis B) Respiratory acidosis
   C) Respiratory alkalosis D) Metabolic alkalosis

6. Inherited mitochondrial enzyme defect may be associated with
   A) Metabolic acidosis B) Respiratory acidosis
   C) Respiratory alkalosis D) Metabolic alkalosis

7. The most abundant intracellular free nucleotide is
   A) UTP B) FAD+ C) NAD+ D) ATP

8. A vitamin that is essential for biosynthesis of purine nucleotides is
   A) Folic acid B) Niacin C) Pyridoxamine D) Vitamin K

9. The RNA molecules that exhibit catalytic activity are called as
   A) Ribonucleotides B) Ribonucleaes C) Ribosomes D) Ribozymes

10. Which of the following statements best describes the role of the sigma factor during transcription:
    A) It is essential for elongation of the RNA transcript
    B) It recognizes and helps RNA polymerase binding to the promoter sequence
    C) It increases RNA polymerase binding to any DNA sequence
    D) It is required for termination of transcription

11. The Ames test is used for
    A) Paternity testing
    B) Prenatal diagnosis of disease
    C) Identification of mutagens
    D) To differentiate between single and double stranded DNA

12. Vitamin B 12 deficiency is associated with deficiency of which of the following minerals:
    A) Chromium B) Cobalt C) Selenium D) Iron

13. Which of the following minerals is used to treat psychotic depression?
    A) Sodium B) Molybdenum C) Lithium D) Magnesium

14. New born babies lose weight in the first week of their life because
    A) They are not able to get enough nutrition till they are well adapted
    B) They lose the placental protein in the first week
    C) They are born with excess total body water, which they lose very fast
    D) Mother's milk is rich in proteins and low in water, so weight loss is due to obligatory water loss

15. Which of the following acts through increased number of aquaporins on the membranes?
    A) Aldosterone B) Vasopressin C) Angiotensin II D) Atrial natriuretic peptide

16. Which of the following hormones I commonly measured in urine for diagnosis of pregnancy?
    A) Human Chorionic Gonadotropin (HCG)
    B) Follicle Stimulating Hormone (FSH)
    C) Progesterone
    D) Lutinizing Hormone (LH)

17. Xenobiotic metabolizing enzymes are affected by which of the following factors:
    A) Species and inter individual differences
    B) Genetically based inter individual differences
    C) Ethnicity and skin color
    D) All of the above

18. A tumour suppressor gene is
    A) Inactivated by loss-of-function mutation B) Activated by gain-of-function mutation
    C) Functional during rumor formation D) Not related to the G1/S Checkpoint

19. Elevated levels of AFP can be found in all of the following, except:
    A) Fetal serum B) Adult liver C) Testicular cancer D) Hepatocellular cancer

20. The most common nucleotide that is the target of mutation by chemical carcinogens is
    A) Adenine B) Guanine C) Thymine D) Cytosine

****

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

[MBBS 0825] **AUGUST 2025** **Sub. Code: 6056**

M.B.B.S. DEGREE EXAMINATION

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

FIRST PROFESSIONAL – (CBME)

PAPER II – BIOCHEMISTRY

Q.P. Code: 526056

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. Inherited mitochondrial enzyme defect may be associated with
   A) Metabolic acidosis B) Respiratory acidosis
   C) Respiratory alkalosis D) Metabolic alkalosis

2. The most abundant intracellular free nucleotide is
   A) UTP B) FAD+ C) NAD+ D) ATP

3. A vitamin that is essential for biosynthesis of purine nucleotides is
   A) Folic acid B) Niacin C) Pyridoxamine D) Vitamin K

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7. Vitamin B 12 deficiency is associated with deficiency of which of the following minerals:
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THE TAMIL NADU Dr. M.G.R. MEDICAL UNIVERSITY

[MBBS 0825] **AUGUST 2025** **Sub. Code: 6056**

M.B.B.S. DEGREE EXAMINATION

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

FIRST PROFESSIONAL – (CBME)

PAPER II – BIOCHEMISTRY

Q.P. Code: 526056

Time: 20 Minutes **Maximum : 20 Marks**

Answer All Questions

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

SET - C

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

[MBBS 0825] **AUGUST 2025** **Sub. Code: 6056**

M.B.B.S. DEGREE EXAMINATION

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

FIRST PROFESSIONAL – (CBME)

PAPER II – BIOCHEMISTRY

Q.P. Code: 526056

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)**

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15. Vitamin B 12 deficiency is associated with deficiency of which of the following minerals:
    A) Chromium B) Cobalt C) Selenium D) Iron

16. Which of the following minerals is used to treat psychotic depression?
    A) Sodium B) Molybdenum C) Lithium D) Magnesium

17. New born babies lose weight in the first week of their life because
    A) They are not able to get enough nutrition till they are well adapted
    B) They lose the placental protein in the first week
    C) They are born with excess total body water, which they lose very fast
    D) Mother's milk is rich in proteins and low in water, so weight loss is due to obligatory water loss

18. Which of the following acts through increased number of aquaporins on the membranes?
    A) Aldosterone B) Vasopressin C) Angiotensin II D) Atrial natriuretic peptide

19. Which of the following hormones I commonly measured in urine for diagnosis of pregnancy?
    A) Human Chorionic Gonadotropin (HCG)
    B) Follicle Stimulating Hormone (FSH)
    C) Progesterone
    D) Lutinizing Hormone (LH)

20. Xenobiotic metabolizing enzymes are affected by which of the following factors:
    A) Species and inter individual differences
    B) Genetically based inter individual differences
    C) Ethnicity and skin color
    D) All of the above

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

[MBBS 1025] **OCTOBER 2025** **Sub. Code: 6056**

M.B.B.S. DEGREE EXAMINATION
(For the candidates admitted from the Academic Year 2021 – 2022 to 2023 – 2024)

FIRST PROFESSIONAL – SUPPLEMENTARY (CBME)
PAPER II – BIOCHEMISTRY
Q.P. Code: 526056

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. One of the following proteins does not have a quaternary structure:
   A) Albumin B) Hemoglobin
   C) Lactate dehydrogenase D) Immunoglobulin G

2. Branched chain keto acid decarboxylation is defective in
   A) Maple syrup urine disease B) Hartnup's disease
   C) Alkaptonuria D) Gangliosidosis

3. All the amino acids contribute carbon atoms to one – carbon pool, EXCEPT
   A) Tryptophan B) Histidine C) Valine D) Serine

4. Albumin – globulin ratio is reversed in all the following conditions, EXCEPT
   A) Cirrhosis liver B) Primary immune deficiency
   C) Nephrotic syndrome D) Multiple myeloma

5. Which of the following conditions will produce a high anion gap acidosis?
   A) Diarrhea B) Renal tubular acidosis C) Renal failure D) Ureterosigmoidostomy

6. Hemoglobin acts as a buffer primarily due o the ionization of its
   A) Glutamate residues B) Histidine residue C) Aspartate residues D) Arginine residues

7. Allopurinol as a treatment for gout works by inhibiting conversion of
   A) AMP to XMP B) Xanthine to uric acid
   C) Inosine to hypoxanthine D) Adenosine to inosine

8. Deoxyribonucleotides are formed from ribonucleotides by a reduction process catalyzed by
   A) Ribonucleotide reductase B) Ribonucleotide oxidase
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9. All types of tRNA molecules have a common aminoacyl acceptor – CCA sequence at
   A) 3' termini B) 5' termini C) Both 3' and 5' termini D) All the above

10. After completion of S phase of a mammalian cell cycle, all the following statements are Correct, EXCEPT:
   A) Histone content is double its amount at G1
   B) Bases of the new strand are paired to those of the parent strand
   C) Each chromosome has 4 telomeres
   D) Sister chromatids are disjoined

11. Identify the laboratory test that would help in distinguishing an orotic aciduria caused by ornithine transcarboxylase deficiency from that caused by UMP synthase deficiency
    A) Blood ammonia levels B) Orotic acid levels
    C) Blood urea levels D) UTP levels.

12. Iodine is an integral component of
    A) Antidiuretic hormone B) Thyroid hormones
    C) Pituitary hormones D) Steroid hormones

13. Keshan's disease is associated with the deficiency of
    A) Molybdenum B) Manganese C) Selenium D) Sulfur

14. The main advantage of cloning in YAC (Yeast Artificial Chromosome) vectors is
    A) Chromosomes replicate faster than plasmids
    B) Growing yeast is easier than growing bacteria
    C) It is possible to clone introns as well as exons
    D) Large regions of genomic DNA can be loaded and cloned

15. Which of the following results in generation of highest amount of metabolic water per gram oxidation of the substance:
    A) Carbohydrates B) Fats C) Proteins D) Nucleic acids

16. Dehydration could be seen in all of the following EXCEPT:
    A) Diabetes mellitus B) Nephrogenic diabetes insipidus
    C) Diarrhea and vomiting D) Burns

17. Growth hormone exerts its growth promoting effects primarily through the action of
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18. Activation of p53 by damaged DNA causes
    A) Induction of cdk4 expression B) Induction of cyclin D expression
    C) Activation of G1-S transition D) Induction of p21 expression

19. Retroviruses can induce cancer by
    A) Injecting oncogenes into the cells
    B) Converting proto-oncogenes into oncogenes
    C) Causing mutations in G proteins
    D) Suppressing p53

20. Phase I reactions are concerned with which of the following:
    A) Conjugation with UDP –glucuronic acid
    B) Excretion of the different conjugates
    C) Monooxygenation
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PAPER II – BIOCHEMISTRY
Q.P. Code: 526056

Time: 20 Minutes **Maximum : 20 Marks**

Answer All Questions
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SET - B

III. Multiple Choice Questions: **(20 x 1 = 20)**

1. Allopurinol as a treatment for gout works by inhibiting conversion of
   A) AMP to XMP B) Xanthine to uric acid
   C) Inosine to hypoxanthine D) Adenosine to inosine

2. Deoxyribonucleotides are formed from ribonucleotides by a reduction process catalyzed by
   A) Ribonucleotide reductase B) Ribonucleotide oxidase
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PAPER II – BIOCHEMISTRY
Q.P. Code: 526056

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SET - C

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SET - D

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