

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 T₃ and T₄ 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 α_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, $p\text{CO}_2$: 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.
