

ATAL BIHARI VAJPAYEE MEDICAL UNIVERSITY, LUCKNOW
MBBS DEGREE EXAMINATION - 1st PROF PROFESSIONAL REGULAR
EXAM - AUGUST 2024

BIOCHEMISTRY - PAPER - I

SECTION A - Multiple Choice Questions (MCQs)

PAPER CODE: 2411130003

SET: B

Note: Choose one correct answer in the OMR sheet provided. No overwriting should be done.

Time: 20 Minutes

(20 x 1 = 20 MARKS)

1. Which lipoprotein is primarily responsible for delivering cholesterol to cells for membrane synapses and hormone production?

- a) IDL
- b) VLDL
- c) LDL
- d) HDL

2. The process of converting acetyl-CoA into malonyl-CoA is called:

- a) Ketogenesis
- b) Lipogenesis
- c) Lipolysis
- d) Beta-oxidation

3. All of the following are responsible for cell junction formation except:

- a) Selectins
- b) Integrins

- c) Cathepsins
- d) Cadherins

4. Tay-Sachs disease is a disorder of which cell organelle:

- a) Endoplasmic reticulum
- b) Lysosomes
- c) Mitochondria
- d) Peroxisome

5. All affect glucose tolerance test except:

- a) Hyperthyroidism
- b) Vitamin B12 deficiency
- c) Acute infections
- d) Liver diseases

6. Which complex of the electron transport chain is also part of the citric acid cycle?

- a) Complex IV
- b) Complex III
- c) Complex II
- d) Complex I

7. Cytochrome P450 enzymes are most commonly involved in which phase of xenobiotic metabolism?

- a) Phase IV
- b) Phase III
- c) Phase II

d) Phase I

8. Which of the following is a potent inhibitor of Complex I in the electron transport chain?

- a) Dinitrophenol
- b) Oligomycin
- c) Rotenone
- d) Cyanide

9. During prolonged fasting, the brain primarily relies on which of the following substrates for energy?

- a) Ketone bodies
- b) Fatty acids
- c) Amino acids
- d) Glucose

10. Glucose and fructose are examples of:

- a) Isomers
- b) Enantiomers
- c) Anomers
- d) Epimers

11. Which of the following organelles is involved in the detoxification of drugs and poisons in the liver cells?

- a) Golgi apparatus
- b) Rough endoplasmic reticulum
- c) Smooth endoplasmic reticulum

d) Lysosomes

12. Which of the following pairs are enantiomers?

- a) D-Glucose and D-Galactose
- b) D-Glucose and L-Glucose
- c) D-Glucose and D-Mannose
- d) α -D-Glucose and β -D-Glucose

13. Elevated levels of which enzyme are most indicative of acute pancreatitis?

- a) Gamma-glutamyl transferase
- b) Alkaline phosphatase
- c) Lipase
- d) Amylase

14. In Lineweaver-Burk plots, what do the x-intercept and y-intercept represent, respectively?

- a) $-1/V_{max}$ and $1/K_m$
- b) V_{max} and $-1/K_m$
- c) $-1/K_m$ and $1/V_{max}$
- d) $1/K_m$ and $-1/V_{max}$

15. Which among the following is the most specific test for diagnosing chronic kidney disease?

- a) Urine protein
- b) Creatinine clearance
- c) Serum creatinine
- d) Blood urea nitrogen (BUN)

16. Which of the following is recommended as a supplement in iron deficiency anaemia?

- a) Vitamin C
- b) Vitamin B12
- c) Vitamin D
- d) Vitamin A

17. Which enzyme is responsible for the breakdown of triglycerides in lipoproteins into free fatty acids and glycerol?

- a) Acetyl-CoA carboxylase
- b) Phospholipase
- c) Hormone-sensitive lipase
- d) Lipoprotein lipase

18. The major route of excretion for many xenobiotics is:

- a) Saliva
- b) Urine
- c) Sweat
- d) Lungs

19. The inhibition of which enzyme leads to a build-up of lactate in cells under anaerobic conditions?

- a) Pyruvate dehydrogenase
- b) Phosphofructokinase
- c) Lactate dehydrogenase
- d) Hexokinase

20. What is the rate-limiting enzyme in cholesterol synthesis?

- a) Mevalonate kinase
- b) Squalene synthase
- c) HMG-CoA synthase
- d) HMG-CoA reductase

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