Unit 13: Biochemistry

40 MCQs. Correct option in bold. 1 mark each.

1. Proteins are called natural polyamides because they are
A. made of sugars
B. made of fatty acids
C. naturally occurring polymers of amino acids
D. synthetic fibres

2. Which of the following best describes proteins?
A. Polymers of amino acids B. Simple sugars
C. Polysaccharides D. Chains of fatty acids

3. The basic structural unit (monomer) of a protein is
A. glycerol **B. an amino acid**
C. a fatty acid D. glucose

4. An amino acid contains an amine group and a
A. hydroxyl group B. phosphate group
C. carbonyl group only **D. carboxylic acid group**

5. Amino acids join together by eliminating a molecule of
A. hydrogen B. carbon dioxide
C. water D. oxygen

6. The linkage that joins two amino acid units is called a
A. glycosidic bond B. hydrogen bond
C. ionic bond **D. peptide bond**

7. Which bond is responsible for linking amino acids together in a protein?
A. Hydrogen bond **B. Peptide bond**
C. Ionic bond D. Metallic bond

8. The sequence of amino acids in a protein chain is its
A. primary structure B. secondary structure
C. quaternary structure D. tertiary structure

9. A protein consisting of more than one folded amino acid chain has a _____ structure.
A. secondary B. primary
C. quaternary D. tertiary

10. Enzymes are
A. carbohydrates
B. proteins that speed up chemical reactions in the body
C. vitamins
D. lipids

11. Haemoglobin in red blood cells carries
A. oxygen B. carbon dioxide only
C. fat D. sugar

12. Insulin is a protein hormone made in the
A. liver B. heart C. kidney **D. pancreas**

13. Which of the following is NOT a function of proteins in the body?
A. Transporting molecules **B. Storing genetic information**
C. Acting as enzymes D. Providing structural support

14. Lipids are components of plant or animal tissue that are
A. soluble in water
B. gaseous
C. insoluble in water but soluble in low-polarity solvents
D. metallic

15. The primary function of lipids in the body is
A. long-term energy storage B. providing immediate energy
C. storing genetic information D. catalysing reactions

16. Fats and oils are esters of fatty acids with
A. glucose B. amino acids
C. ethanol **D. glycerol**

17. Carbohydrates have the general formula
A. R–NH_2 **B. $C_x(H_2O)_y$** C. RCOOH D. C_nH_{2n+2}

18. Plants prepare carbohydrates by
A. cracking B. distillation
C. photosynthesis D. fermentation

19. The primary function of carbohydrates is to
A. provide energy to the body B. store genetic information
C. carry oxygen D. make enzymes

20. Nucleic acids are the main _____ molecules of the cell.
A. structural metal B. water-storing
C. energy-storing **D. information-carrying**

21. DNA stands for
A. deoxyribose nitric acid **B. deoxyribonucleic acid**
C. dioxyribonucleic acid D. dinucleic acid

22. The acid that carries genetic information is
A. sulphuric acid B. amino acid
C. ascorbic acid **D. nucleic acid**

23. Vitamins are
A. organic molecules needed in small quantities for proper metabolic function
B. inorganic molecules
C. sources of direct energy
D. the primary source of protein

24. The number of essential vitamins is
A. 3 B. 5 **C. 13** D. 20

25. The fat-soluble vitamins are
A. B, C and D B. B and C
C. A and C **D. A, D, E and K**

26. The water-soluble vitamins are
A. B and C B. E and K
C. A and D D. A, D, E and K

27. Vitamin A supports
A. blood clotting **B. vision, immune function and skin health**
C. calcium absorption D. red blood cells only

28. Vitamin C is found in
A. nuts only B. meat only
C. oranges, strawberries and tomatoes D. cheese only

29. Vitamin D is essential for
A. bone health and calcium absorption B. blood clotting
C. vision D. skin colour

30. Vitamin K is essential for
A. calcium absorption B. vision
C. blood clotting D. digestion

31. Vitamin E acts as an
A. hormone **B. antioxidant**
C. enzyme D. fuel

32. Biochemistry is the study of
A. metals B. stars
C. rocks **D. chemical processes within a cell**

33. A pregnancy test checks urine or blood for the hormone
A. testosterone B. insulin
C. hCG (human chorionic gonadotropin) D. adrenaline

34. Which biochemistry application is used to determine parentage?
A. Parental genetic testing B. Pregnancy test
C. Genetic engineering D. Cancer screening

35. Genetics is the branch of biology that studies
A. metals **B. genes, heredity and variation**
C. rocks D. acids

36. Genetic engineering is a process that uses laboratory technology to
A. make metals B. cook food
C. measure temperature **D. modify the DNA of an organism**

37. Gene therapy is a medical technique that
A. changes all DNA in the body
B. cooks food
C. modifies a person's genes to treat or prevent disease
D. makes vitamins

38. Cloning means
A. killing cells
B. producing an exact genetic copy of a gene, cell or organism
C. producing a different organism
D. mixing acids

39. Therapeutic cloning produces
A. embryonic stem cells for medical research
B. proteins
C. vitamins
D. identical animals

40. Stem cells are special cells that can
A. never divide
B. make vitamins
C. produce metals
D. transform into different types of cells