

CHAPTER 1

INTRODUCTION TO BIOCHEMISTRY

- 1. A drug which prevents uric acid synthesis by inhibiting the enzyme xanthine oxidase is**
(A) Aspirin (B) Allopurinol
(C) Colchicine (D) Probenecid
- 2. Which of the following is required for crystallization and storage of the hormone insulin?**
(A) Mn^{++} (B) Mg^{++}
(C) Ca^{++} (D) Zn^{++}
- 3. Oxidation of which substance in the body yields the most calories**
(A) Glucose (B) Glycogen
(C) Protein (D) Lipids
- 4. Milk is deficient in which vitamins?**
(A) Vitamin C (B) Vitamin A
(C) Vitamin B₂ (D) Vitamin K
- 5. Milk is deficient of which mineral?**
(A) Phosphorus (B) Sodium
(C) Iron (D) Potassium
- 6. Synthesis of prostaglandins is inhibited by**
(A) Aspirin (B) Arsenic
(C) Fluoride (D) Cyanide
- 7. HDL is synthesized and secreted from**
(A) Pancreas (B) Liver
(C) Kidney (D) Muscle
- 8. Which are the cholesterol esters that enter cells through the receptor-mediated endocytosis of lipoproteins hydrolyzed?**
(A) Endoplasmic reticulum
(B) Lysosomes
(C) Plasma membrane receptor
(D) Mitochondria
- 9. Which of the following phospholipids is localized to a greater extent in the outer leaflet of the membrane lipid bilayer?**
(A) Choline phosphoglycerides
(B) Ethanolamine phosphoglycerides
(C) Inositol phosphoglycerides
(D) Serine phosphoglycerides
- 10. All the following processes occur rapidly in the membrane lipid bilayer except**
(A) Flexing of fatty acyl chains
(B) Lateral diffusion of phospholipids
(C) Transbilayer diffusion of phospholipids
(D) Rotation of phospholipids around their long axes
- 11. Which of the following statement is correct about membrane cholesterol?**
(A) The hydroxyl group is located near the centre of the lipid layer
(B) Most of the cholesterol is in the form of a cholesterol ester
(C) The steroid nucleus forms a rigid, planar structure

- (D) The hydrocarbon chain of cholesterol projects into the extracellular fluid
- 12. Which one is the heaviest particulate component of the cell?**
- (A) Nucleus (B) Mitochondria
(C) Cytoplasm (D) Golgi apparatus
- 13. Which one is the largest particulate of the cytoplasm?**
- (A) Lysosomes
(B) Mitochondria
(C) Golgi apparatus
(D) Entoplasmic reticulum
- 14. The degradative Processes are categorized under the heading of**
- (A) Anabolism (B) Catabolism
(C) Metabolism (D) None of the above
- 15. The exchange of material takes place**
- (A) Only by diffusion
(B) Only by active transport
(C) Only by pinocytosis
(D) All of these
- 16. The average pH of Urine is**
- (A) 7.0 (B) 6.0
(C) 8.0 (D) 0.0
- 17. The pH of blood is 7.4 when the ratio between H_2CO_3 and $NaHCO_3$ is**
- (A) 1 : 10 (B) 1 : 20
(C) 1 : 25 (D) 1 : 30
- 18. The phenomenon of osmosis is opposite to that of**
- (A) Diffusion (B) Effusion
(C) Affusion (D) Coagulation
- 19. The surface tension in intestinal lumen between fat droplets and aqueous medium is decreased by**
- (A) Bile Salts (B) Bile acids
(C) Conc. H_2SO_4 (D) Acetic acid
- 20. Which of the following is located in the mitochondria?**
- (A) Cytochrome oxidase
(B) Succinate dehydrogenase
(C) Dihydrolipoyl dehydrogenase
(C) All of these
- 21. The most active site of protein synthesis is the**
- (A) Nucleus (B) Ribosome
(C) Mitochondrion (D) Cell sap
- 22. The fatty acids can be transported into and out of mitochondria through**
- (A) Active transport
(B) Facilitated transfer
(C) Non-facilitated transfer
(D) None of these
- 23. Mitochondrial DNA is**
- (A) Circular double stranded
(B) Circular single stranded
(C) Linear double helix
(D) None of these
- 24. The absorption of intact protein from the gut in the foetal and newborn animals takes place by**
- (A) Pinocytosis (B) Passive diffusion
(C) Simple diffusion (D) Active transport
- 25. The cellular organelles called "suicide bags" are**
- (A) Lysosomes (B) Ribosomes
(C) Nucleolus (D) Golgi's bodies
- 26. From the biological viewpoint, solutions can be grouped into**
- (A) Isotonic solution
(B) Hypotonic solutions
(C) Hypertonic solution
(D) All of these
- 27. Bulk transport across cell membrane is accomplished by**
- (A) Phagocytosis (B) Pinocytosis
(C) Extrusion (D) All of these
- 28. The ability of the cell membrane to act as a selective barrier depends upon**
- (A) The lipid composition of the membrane
(B) The pores which allows small molecules
(C) The special mediated transport systems
(D) All of these

29. Carrier protein can

- (A) Transport only one substance
- (B) Transport more than one substance
- (C) Exchange one substance to another
- (D) Perform all of these functions

30. A lipid bilayer is permeable to

- (A) Urea (B) Fructose
- (C) Glucose (D) Potassium

31. The Golgi complex

- (A) Synthesizes proteins
- (B) Produces ATP
- (C) Provides a pathway for transporting chemicals
- (D) Forms glycoproteins

32. The following points about microfilaments are true except

- (A) They form cytoskeleton with microtubules
- (B) They provide support and shape
- (C) They form intracellular conducting channels
- (D) They are involved in muscle cell contraction

33. The following substances are cell inclusions except

- (A) Melanin (B) Glycogen
- (C) Lipids (D) Centrosome

34. Fatty acids can be transported into and out of cell membrane by

- (A) Active transport (B) Facilitated transport
- (C) Diffusion (D) Osmosis

35. Enzymes catalyzing electron transport are present mainly in the

- (A) Ribosomes
- (B) Endoplasmic reticulum
- (C) Lysosomes
- (D) Inner mitochondrial membrane

36. Mature erythrocytes do not contain

- (A) Glycolytic enzymes (B) HMP shunt enzymes
- (C) Pyridine nucleotide (D) ATP

37. In mammalian cells rRNA is produced mainly in the

- (A) Endoplasmic reticulum
- (B) Ribosome
- (C) Nucleolus
- (D) Nucleus

38. Genetic information of nuclear DNA is transmitted to the site of protein synthesis by

- (A) rRNA (B) mRNA
- (C) tRNA (D) Polysomes

39. The power house of the cell is

- (A) Nucleus (B) Cell membrane
- (C) Mitochondria (D) Lysosomes

40. The digestive enzymes of cellular compounds are confined to

- (A) Lysosomes (B) Ribosomes
- (C) Peroxisomes (D) Polysomes

ANSWERS

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|-------|-------|-------|-------|-------|-------|
| 1. B | 2. D | 3. D | 4. A | 5. C | 6. A |
| 7. B | 8. B | 9. A | 10. C | 11. C | 12. A |
| 13. B | 14. B | 15. D | 16. B | 17. B | 18. A |
| 19. A | 20. D | 21. B | 22. B | 23. A | 24. A |
| 25. A | 26. D | 27. D | 28. D | 29. D | 30. A |
| 31. D | 32. C | 33. D | 34. B | 35. D | 36. C |
| 37. C | 38. D | 39. C | 40. A | | |

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