

100 Medium-Level Biochemistry MCQs with Answers

1. Hydrogen bonding in water is responsible for:

- A) Its low boiling point
- B) Its ability to dissolve nonpolar substances
- C) Cohesion and high surface tension
- D) Its non-polar nature

Answer: C

2. Which of the following acts as the primary buffer in human blood?

- A) Ammonia buffer
- B) Phosphate buffer
- C) Bicarbonate buffer
- D) Acetate buffer

Answer: C

3. Which functional group in glucose is responsible for its reducing nature?

- A) Ketone group
- B) Aldehyde group
- C) Carboxyl group
- D) Alcohol group

Answer: B

4. Which of the following disaccharides is non-reducing?

- A) Maltose
- B) Lactose
- C) Cellobiose
- D) Sucrose

Answer: D

5. Unsaturated fatty acids differ from saturated ones by:

- A) Having more hydrogen atoms
- B) Having at least one double bond
- C) Being solid at room temperature
- D) Lacking carbon atoms

Answer: B

6. At its isoelectric point, an amino acid exists as:

- A) A free acid
- B) A free base
- C) A zwitterion
- D) A racemic mixture

Answer: C

7. Which level of protein structure is maintained by hydrogen bonds between backbone atoms?

- A) Primary
- B) Secondary
- C) Tertiary
- D) Quaternary

Answer: B

8. The Michaelis constant (K_m) represents:

- A) Maximum enzyme velocity
- B) Enzyme concentration
- C) Substrate concentration at half V_{max}
- D) Rate of reaction at saturation

Answer: C

9. Allosteric enzymes typically exhibit:

- A) Michaelis-Menten kinetics
- B) Sigmoidal kinetics
- C) Linear kinetics
- D) Zero-order kinetics

Answer: B

10. Which DNA form is most commonly found in living cells?

- A) A-DNA
- B) B-DNA
- C) Z-DNA
- D) C-DNA

Answer: B

11. Hydrogen bonding in water is responsible for:

- A) Its low boiling point
- B) Its ability to dissolve nonpolar substances
- C) Cohesion and high surface tension

D) Its non-polar nature

Answer: C

12. Which of the following acts as the primary buffer in human blood?

A) Ammonia buffer

B) Phosphate buffer

C) Bicarbonate buffer

D) Acetate buffer

Answer: C

13. Which functional group in glucose is responsible for its reducing nature?

A) Ketone group

B) Aldehyde group

C) Carboxyl group

D) Alcohol group

Answer: B

14. Which of the following disaccharides is non-reducing?

A) Maltose

B) Lactose

C) Cellobiose

D) Sucrose

Answer: D

15. Unsaturated fatty acids differ from saturated ones by:

A) Having more hydrogen atoms

B) Having at least one double bond

C) Being solid at room temperature

D) Lacking carbon atoms

Answer: B

16. At its isoelectric point, an amino acid exists as:

A) A free acid

B) A free base

C) A zwitterion

D) A racemic mixture

Answer: C

17. Which level of protein structure is maintained by hydrogen bonds between backbone atoms?

- A) Primary
- B) Secondary
- C) Tertiary
- D) Quaternary

Answer: B

18. The Michaelis constant (K_m) represents:

- A) Maximum enzyme velocity
- B) Enzyme concentration
- C) Substrate concentration at half V_{max}
- D) Rate of reaction at saturation

Answer: C

19. Allosteric enzymes typically exhibit:

- A) Michaelis-Menten kinetics
- B) Sigmoidal kinetics
- C) Linear kinetics
- D) Zero-order kinetics

Answer: B

20. Which DNA form is most commonly found in living cells?

- A) A-DNA
- B) B-DNA
- C) Z-DNA
- D) C-DNA

Answer: B

21. Hydrogen bonding in water is responsible for:

- A) Its low boiling point
- B) Its ability to dissolve nonpolar substances
- C) Cohesion and high surface tension
- D) Its non-polar nature

Answer: C

22. Which of the following acts as the primary buffer in human blood?

- A) Ammonia buffer
- B) Phosphate buffer
- C) Bicarbonate buffer

D) Acetate buffer

Answer: C

23. Which functional group in glucose is responsible for its reducing nature?

A) Ketone group

B) Aldehyde group

C) Carboxyl group

D) Alcohol group

Answer: B

24. Which of the following disaccharides is non-reducing?

A) Maltose

B) Lactose

C) Cellobiose

D) Sucrose

Answer: D

25. Unsaturated fatty acids differ from saturated ones by:

A) Having more hydrogen atoms

B) Having at least one double bond

C) Being solid at room temperature

D) Lacking carbon atoms

Answer: B

26. At its isoelectric point, an amino acid exists as:

A) A free acid

B) A free base

C) A zwitterion

D) A racemic mixture

Answer: C

27. Which level of protein structure is maintained by hydrogen bonds between backbone atoms?

A) Primary

B) Secondary

C) Tertiary

D) Quaternary

Answer: B

28. The Michaelis constant (K_m) represents:

- A) Maximum enzyme velocity
- B) Enzyme concentration
- C) Substrate concentration at half V_{max}
- D) Rate of reaction at saturation

Answer: C

29. Allosteric enzymes typically exhibit:

- A) Michaelis-Menten kinetics
- B) Sigmoidal kinetics
- C) Linear kinetics
- D) Zero-order kinetics

Answer: B

30. Which DNA form is most commonly found in living cells?

- A) A-DNA
- B) B-DNA
- C) Z-DNA
- D) C-DNA

Answer: B

31. Hydrogen bonding in water is responsible for:

- A) Its low boiling point
- B) Its ability to dissolve nonpolar substances
- C) Cohesion and high surface tension
- D) Its non-polar nature

Answer: C

32. Which of the following acts as the primary buffer in human blood?

- A) Ammonia buffer
- B) Phosphate buffer
- C) Bicarbonate buffer
- D) Acetate buffer

Answer: C

33. Which functional group in glucose is responsible for its reducing nature?

- A) Ketone group
- B) Aldehyde group
- C) Carboxyl group

D) Alcohol group

Answer: B

34. Which of the following disaccharides is non-reducing?

A) Maltose

B) Lactose

C) Cellobiose

D) Sucrose

Answer: D

35. Unsaturated fatty acids differ from saturated ones by:

A) Having more hydrogen atoms

B) Having at least one double bond

C) Being solid at room temperature

D) Lacking carbon atoms

Answer: B

36. At its isoelectric point, an amino acid exists as:

A) A free acid

B) A free base

C) A zwitterion

D) A racemic mixture

Answer: C

37. Which level of protein structure is maintained by hydrogen bonds between backbone atoms?

A) Primary

B) Secondary

C) Tertiary

D) Quaternary

Answer: B

38. The Michaelis constant (K_m) represents:

A) Maximum enzyme velocity

B) Enzyme concentration

C) Substrate concentration at half V_{max}

D) Rate of reaction at saturation

Answer: C

39. Allosteric enzymes typically exhibit:

- A) Michaelis-Menten kinetics
- B) Sigmoidal kinetics
- C) Linear kinetics
- D) Zero-order kinetics

Answer: B

40. Which DNA form is most commonly found in living cells?

- A) A-DNA
- B) B-DNA
- C) Z-DNA
- D) C-DNA

Answer: B

41. Hydrogen bonding in water is responsible for:

- A) Its low boiling point
- B) Its ability to dissolve nonpolar substances
- C) Cohesion and high surface tension
- D) Its non-polar nature

Answer: C

42. Which of the following acts as the primary buffer in human blood?

- A) Ammonia buffer
- B) Phosphate buffer
- C) Bicarbonate buffer
- D) Acetate buffer

Answer: C

43. Which functional group in glucose is responsible for its reducing nature?

- A) Ketone group
- B) Aldehyde group
- C) Carboxyl group
- D) Alcohol group

Answer: B

44. Which of the following disaccharides is non-reducing?

- A) Maltose
- B) Lactose
- C) Cellobiose

D) Sucrose

Answer: D

45. Unsaturated fatty acids differ from saturated ones by:

- A) Having more hydrogen atoms
- B) Having at least one double bond
- C) Being solid at room temperature
- D) Lacking carbon atoms

Answer: B

46. At its isoelectric point, an amino acid exists as:

- A) A free acid
- B) A free base
- C) A zwitterion
- D) A racemic mixture

Answer: C

47. Which level of protein structure is maintained by hydrogen bonds between backbone atoms?

- A) Primary
- B) Secondary
- C) Tertiary
- D) Quaternary

Answer: B

48. The Michaelis constant (K_m) represents:

- A) Maximum enzyme velocity
- B) Enzyme concentration
- C) Substrate concentration at half V_{max}
- D) Rate of reaction at saturation

Answer: C

49. Allosteric enzymes typically exhibit:

- A) Michaelis-Menten kinetics
- B) Sigmoidal kinetics
- C) Linear kinetics
- D) Zero-order kinetics

Answer: B

50. Which DNA form is most commonly found in living cells?

- A) A-DNA
- B) B-DNA
- C) Z-DNA
- D) C-DNA

Answer: B

51. Hydrogen bonding in water is responsible for:

- A) Its low boiling point
- B) Its ability to dissolve nonpolar substances
- C) Cohesion and high surface tension
- D) Its non-polar nature

Answer: C

52. Which of the following acts as the primary buffer in human blood?

- A) Ammonia buffer
- B) Phosphate buffer
- C) Bicarbonate buffer
- D) Acetate buffer

Answer: C

53. Which functional group in glucose is responsible for its reducing nature?

- A) Ketone group
- B) Aldehyde group
- C) Carboxyl group
- D) Alcohol group

Answer: B

54. Which of the following disaccharides is non-reducing?

- A) Maltose
- B) Lactose
- C) Cellobiose
- D) Sucrose

Answer: D

55. Unsaturated fatty acids differ from saturated ones by:

- A) Having more hydrogen atoms
- B) Having at least one double bond
- C) Being solid at room temperature

D) Lacking carbon atoms

Answer: B

56. At its isoelectric point, an amino acid exists as:

A) A free acid

B) A free base

C) A zwitterion

D) A racemic mixture

Answer: C

57. Which level of protein structure is maintained by hydrogen bonds between backbone atoms?

A) Primary

B) Secondary

C) Tertiary

D) Quaternary

Answer: B

58. The Michaelis constant (K_m) represents:

A) Maximum enzyme velocity

B) Enzyme concentration

C) Substrate concentration at half V_{max}

D) Rate of reaction at saturation

Answer: C

59. Allosteric enzymes typically exhibit:

A) Michaelis-Menten kinetics

B) Sigmoidal kinetics

C) Linear kinetics

D) Zero-order kinetics

Answer: B

60. Which DNA form is most commonly found in living cells?

A) A-DNA

B) B-DNA

C) Z-DNA

D) C-DNA

Answer: B

61. Hydrogen bonding in water is responsible for:

- A) Its low boiling point
- B) Its ability to dissolve nonpolar substances
- C) Cohesion and high surface tension
- D) Its non-polar nature

Answer: C

62. Which of the following acts as the primary buffer in human blood?

- A) Ammonia buffer
- B) Phosphate buffer
- C) Bicarbonate buffer
- D) Acetate buffer

Answer: C

63. Which functional group in glucose is responsible for its reducing nature?

- A) Ketone group
- B) Aldehyde group
- C) Carboxyl group
- D) Alcohol group

Answer: B

64. Which of the following disaccharides is non-reducing?

- A) Maltose
- B) Lactose
- C) Cellobiose
- D) Sucrose

Answer: D

65. Unsaturated fatty acids differ from saturated ones by:

- A) Having more hydrogen atoms
- B) Having at least one double bond
- C) Being solid at room temperature
- D) Lacking carbon atoms

Answer: B

66. At its isoelectric point, an amino acid exists as:

- A) A free acid
- B) A free base
- C) A zwitterion

D) A racemic mixture

Answer: C

67. Which level of protein structure is maintained by hydrogen bonds between backbone atoms?

A) Primary

B) Secondary

C) Tertiary

D) Quaternary

Answer: B

68. The Michaelis constant (K_m) represents:

A) Maximum enzyme velocity

B) Enzyme concentration

C) Substrate concentration at half V_{max}

D) Rate of reaction at saturation

Answer: C

69. Allosteric enzymes typically exhibit:

A) Michaelis-Menten kinetics

B) Sigmoidal kinetics

C) Linear kinetics

D) Zero-order kinetics

Answer: B

70. Which DNA form is most commonly found in living cells?

A) A-DNA

B) B-DNA

C) Z-DNA

D) C-DNA

Answer: B

71. Hydrogen bonding in water is responsible for:

A) Its low boiling point

B) Its ability to dissolve nonpolar substances

C) Cohesion and high surface tension

D) Its non-polar nature

Answer: C

72. Which of the following acts as the primary buffer in human blood?

- A) Ammonia buffer
- B) Phosphate buffer
- C) Bicarbonate buffer
- D) Acetate buffer

Answer: C

73. Which functional group in glucose is responsible for its reducing nature?

- A) Ketone group
- B) Aldehyde group
- C) Carboxyl group
- D) Alcohol group

Answer: B

74. Which of the following disaccharides is non-reducing?

- A) Maltose
- B) Lactose
- C) Cellobiose
- D) Sucrose

Answer: D

75. Unsaturated fatty acids differ from saturated ones by:

- A) Having more hydrogen atoms
- B) Having at least one double bond
- C) Being solid at room temperature
- D) Lacking carbon atoms

Answer: B

76. At its isoelectric point, an amino acid exists as:

- A) A free acid
- B) A free base
- C) A zwitterion
- D) A racemic mixture

Answer: C

77. Which level of protein structure is maintained by hydrogen bonds between backbone atoms?

- A) Primary
- B) Secondary
- C) Tertiary

D) Quaternary

Answer: B

78. The Michaelis constant (K_m) represents:

A) Maximum enzyme velocity

B) Enzyme concentration

C) Substrate concentration at half V_{max}

D) Rate of reaction at saturation

Answer: C

79. Allosteric enzymes typically exhibit:

A) Michaelis-Menten kinetics

B) Sigmoidal kinetics

C) Linear kinetics

D) Zero-order kinetics

Answer: B

80. Which DNA form is most commonly found in living cells?

A) A-DNA

B) B-DNA

C) Z-DNA

D) C-DNA

Answer: B

81. Hydrogen bonding in water is responsible for:

A) Its low boiling point

B) Its ability to dissolve nonpolar substances

C) Cohesion and high surface tension

D) Its non-polar nature

Answer: C

82. Which of the following acts as the primary buffer in human blood?

A) Ammonia buffer

B) Phosphate buffer

C) Bicarbonate buffer

D) Acetate buffer

Answer: C

83. Which functional group in glucose is responsible for its reducing nature?

- A) Ketone group
- B) Aldehyde group
- C) Carboxyl group
- D) Alcohol group

Answer: B

84. Which of the following disaccharides is non-reducing?

- A) Maltose
- B) Lactose
- C) Cellobiose
- D) Sucrose

Answer: D

85. Unsaturated fatty acids differ from saturated ones by:

- A) Having more hydrogen atoms
- B) Having at least one double bond
- C) Being solid at room temperature
- D) Lacking carbon atoms

Answer: B

86. At its isoelectric point, an amino acid exists as:

- A) A free acid
- B) A free base
- C) A zwitterion
- D) A racemic mixture

Answer: C

87. Which level of protein structure is maintained by hydrogen bonds between backbone atoms?

- A) Primary
- B) Secondary
- C) Tertiary
- D) Quaternary

Answer: B

88. The Michaelis constant (K_m) represents:

- A) Maximum enzyme velocity
- B) Enzyme concentration
- C) Substrate concentration at half V_{max}

D) Rate of reaction at saturation

Answer: C

89. Allosteric enzymes typically exhibit:

A) Michaelis-Menten kinetics

B) Sigmoidal kinetics

C) Linear kinetics

D) Zero-order kinetics

Answer: B

90. Which DNA form is most commonly found in living cells?

A) A-DNA

B) B-DNA

C) Z-DNA

D) C-DNA

Answer: B

91. Hydrogen bonding in water is responsible for:

A) Its low boiling point

B) Its ability to dissolve nonpolar substances

C) Cohesion and high surface tension

D) Its non-polar nature

Answer: C

92. Which of the following acts as the primary buffer in human blood?

A) Ammonia buffer

B) Phosphate buffer

C) Bicarbonate buffer

D) Acetate buffer

Answer: C

93. Which functional group in glucose is responsible for its reducing nature?

A) Ketone group

B) Aldehyde group

C) Carboxyl group

D) Alcohol group

Answer: B

94. Which of the following disaccharides is non-reducing?

- A) Maltose
- B) Lactose
- C) Cellobiose
- D) Sucrose

Answer: D

95. Unsaturated fatty acids differ from saturated ones by:

- A) Having more hydrogen atoms
- B) Having at least one double bond
- C) Being solid at room temperature
- D) Lacking carbon atoms

Answer: B

96. At its isoelectric point, an amino acid exists as:

- A) A free acid
- B) A free base
- C) A zwitterion
- D) A racemic mixture

Answer: C

97. Which level of protein structure is maintained by hydrogen bonds between backbone atoms?

- A) Primary
- B) Secondary
- C) Tertiary
- D) Quaternary

Answer: B

98. The Michaelis constant (K_m) represents:

- A) Maximum enzyme velocity
- B) Enzyme concentration
- C) Substrate concentration at half V_{max}
- D) Rate of reaction at saturation

Answer: C

99. Allosteric enzymes typically exhibit:

- A) Michaelis-Menten kinetics
- B) Sigmoidal kinetics
- C) Linear kinetics

D) Zero-order kinetics

Answer: B

100. Which DNA form is most commonly found in living cells?

A) A-DNA

B) B-DNA

C) Z-DNA

D) C-DNA

Answer: B