

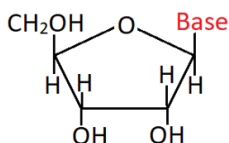
COURSE : ALLIED – CORE
PAPER : FUNDAMENTALS OF BIOCHEMISTRY - II
TIME : 3 HOURS MAX. MARKS: 100

SECTION – A

ANSWER ALL QUESTIONS: (30 X 1 = 30)

I. CHOOSE THE CORRECT ANSWER:

1. The structure shown is that of a _____



- a) DNA nucleoside b) RNA nucleotide c) DNA nucleotide d) RNA nucleoside
2. Mark the one, which is NOT a stop codon?
a) UAA b) UAG c) UGA d) GGA
3. Which of the following phospholipid is considered as a major constituent of nervous tissue?
a) Glycerophospholipid b) Plasmalogen c) Inositol d) Sphingomyelin
4. Which of the following is false about lipids?
a) They are either strongly hydrophobic or amphipathic
b) They are more soluble in water
c) Extraction of lipids from tissues require organic solvents
d) They are insoluble in water
5. Which out of the followings is NOT a fibrous protein?
a) Carbonic anhydrase b) Collagen c) Fibrinogen d) Keratin
6. The major products of hydrolysis of proteins _____
a) aminoacids b) glucose c) ketone bodies d) fatty acids
7. What is the reaction in DNA replication catalyzed by DNA ligase?
a) Addition of new nucleotides to the leading strand
b) Addition of new nucleotide to the lagging strand
c) Formation of a phosphodiester bond between the 3'-OH of one Okazaki fragment and the 5'-phosphate of the next on the lagging strand
d) Base pairing of the template and the newly formed DNA strand

8. Steroids have _____
a) Sterol nucleus with two alkyl chain attached to the ring D of cholesterol
b) Sterol nucleus with two CH₃ between C and D ring and A and B ring of cholesterol
c) Sterol nucleus without CH₃ between C ring and D ring of cholesterol
d) Sterol nucleus but lack the alkyl chain attached to the ring D of cholesterol
9. Which of the following are not the components of RNA?
a) Guanine b) Cytosine c) Thymine d) Adenine
10. Lack of which component in diet causes hypothyroidism?
a) Potassium b) Vitamin C c) Iodine d) Water

II. FILL IN THE BLANKS:

11. Ribosomes are made up of _____
12. FDNB stands for _____
13. The amino acid that is considered as negatively charged amino acid is _____
14. Glycine reacts with formaldehyde to form _____
15. The number of hydroxyl group present in fat or oil can be expressed as _____.
16. The number of hydrogen bonds between Guanine and Cytosine is _____.
17. The principle of dialysis is _____
18. HPLC stands for _____
19. The receptors for steroid hormones reside at _____
20. The peptide hormone that lowers blood sugar level is _____.

III. STATE WHETHER TRUE OR FALSE:

21. Lysine is an acidic amino acid.
22. Linolenic acid is an essential fatty acid.
23. At the isoelectric point the amino acids are electrically neutral.
24. All hormones are proteins.
25. The centrifugation is based on the principle of when a force is less than the gravity desired.

IV. ANSWER IN ONE OR TWO SENTENCES:

26. Define denaturation.
27. What is ketosis?
28. Give any one function of insulin.
29. Define a genetic code.
30. What is ultracentrifugation?

SECTION – B**ANSWER ANY FIVE QUESTIONS:****(5x6 = 30)**

31. Define the following terms and give their significance; a) iodine value b) saponification value and RM value
32. Explain the biosynthesis of urea by urea cycle.
33. Describe the functions of thyroxin and clinical significance of TSH, T₃ and T₄.
34. What are the different types of RNA? Explain the structure and function of t-RNA.
35. Explain the procedure to separate amino acids using TLC.
36. Explain DNA replication.
37. How are amino acids classified based on R groups with examples?

SECTION – C**ANSWER ANY TWO QUESTIONS:****(2x20 = 40)**

38. a) Elaborate on the structure of proteins. (12 marks)
b) Describe the mechanism of hormone action (8 marks)
39. a) Discuss the structure of DNA. (7 marks)
b) State the principle and give one applications of SDS-PAGE. (3 marks)
c) Discuss the classification of saponifiable lipids (10 marks)
40. a) Explain the beta oxidation of fatty acids. (6 marks)
b) Differentiate between HDL and LDL and give their significance (8 marks)
c) Describe the reaction of amino acids with ninhydrin, formaldehyde and nitrous acid. (6 marks)

