BIOMOLECULES

1. A nitrogenous base is linked to the pentose sugar through :

(1) Phosphodiester linkage

(2) N-glycosidic linkage

(3) Ester linkage

(4) Phosphoester linkage

2. Which of the following is a nucleoside of DNA ?

(1) Adenosine

(2) Guanine

(3) Deoxyguanosine

(4) Deoxyguanylic acid

3. Which of the following is not the feature of double helix structure of DNA ?

(1) It is made of two polynucleotide chains

(2) The two chains have anti-parallel polarity

(3) The bases in two strands are paired through N-glycosidic bond.

(4) The two chains are coiled in a right handed fashion.

4. Which of the following compound is present in acid soluble pool when we analyse chemical composition?

(1) Protein (2) Lipid

(3) Glucose (4) Carotenoid

5. Which of the following elements present most abundantly on earth crust?

(1) Carbon (2) Hydrogen

(3) Oxygen (4) Silicon

6. If $-NH_2$ group and –COOH group are attached on same carbon in any amino acid, then these types of amino acids are known as :

(1) α-AA (2) β-AA

(3) γ-AA (4) All

7. Variations in amino acids depend on :

(1) Side group (2) Ester group

(3) Complexity of cell (4) None of them

8. How many carbon atoms are found in arachidonic acid?

(1) 16 (2) 18 (3) 20 (4) 22

9. Which of the following AA is basic ?

(1) Valine (2) Lysine

(3) Glutamic acid (4) Glycine

10. How many total carbons are found in palmitic acid?

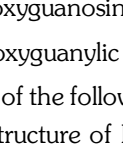
(1) 15 (2) 16

(3) 17 (4) 18

11. Lipid may be :

(1) Monoglyceride (2) Diglyceride

(3) Triglyceride (4) All the above

12.  This amino acid is :

(1) Serine (2) Alanine

(3) Glycine (4) Arginine

13. Which functional group is common in fatty acid & amino acid ?

(1) –COOH (2) $-NH_2$

(3) –OH (4) All

14. Which of the following is micromolecule ?

(1) Lipid (2) DNA

(3) Protein (4) All

15. Antibiotics are :

(1) Primary metabolites

(2) Secondary metabolites

(3) The product obtained from virus

(4) None of them

16. In proteins, amino acids are attached together by :

(1) Peptide bond (2) Amide bond

(3) Ester bond (4) 1 & 2 both

17. Proteins can act as :

(1) transporter of nutrients across cell membrane

(2) Hormones

(3) Enzymes

(4) All

18. Which of the following is homopolysaccharide?

(1) Cellulose (2) Starch

(3) Glycogen (4) All

19. Which of the following statements is correct ?

(1) 3' end of polynucleotide chain will be present where –OH group of 3' carbon of pentose sugar will be free.

(2) Both the strands of DNA are antiparallel due to opposite directing phosphodiester bond.

(3) DNA is more stable than RNA

(4) All

20. Which N-base is odd in the case of DNA?

(1) Cytosine (2) Guanine

(3) Uracil (4) 5-Methyl uracil

21. How many H-bonds are present bewteen cytosine and guanine in double stranded DNA formation?

(1) 2 (2) 3 (3) 4 (4) 1

22. $DNA \xrightarrow{A} RNA \xrightarrow{B}$ Protein, Name the process 'B'

(1) Replication (2) Trancription

(3) Translation (4) Taminism

23. There is a wide diversity in living organism in our biosphere and all living organism made of the same chemical. This statement can be justified by all of the following statement except :

(1) Plant tissue, animal tissue and a microbial paste having same elements

(2) Organisms having similar mode of genetic transfer mechanism.

(3) Mechanism of energy transfer process are almost similar in all organism

(4) Mechanism of energy production is similar in all organism.

24. All the elements present in a sample of earth's crust are also present in a sample of living tissue, but which of the following element is higher in any living organism than in earth's crust?

(1) Hydrogen, Oxygen, Carbon.

(2) Hydrogen, Oxygen, Carbon and Nitrogen

(3) Hydrogen, Oxygen, Carbon, Nitrogen and Sulphur.

(4) Hydrogen, Oxygen, Carbon, Nitrogen, Sulphur and Sodium

25. Which of the following compounds is used in the chemical analysis of living tissue?

(1) CH_3COOH (2) Cl_3CCOOH

(3) HCHO (4) $C_6H_{12}O_6$

26. Which of the following can be included alongwith biomolecules?

(a) Carbohydrate (b) Protein

(c) Lipids (d) Nucleic acid

(e) Vitamins (f) Minerals

(g) Water

(1) a, b, c, d, e, f, g (2) a, b, c, d, e, f

(3) a, b, c, d, e (4) a, b, c, d

27. Which of the following is maximum in human body

(1) Hydrogen (2) Carbon

(3) Oxygen (4) Nitrogen

28. Inulin is a polymer of

(1) Glucose (2) Amino acids

(3) Fructose (4) Nucleotides

29. When a dry piece of tissue is fully burnt, all the carbon compounds are oxidised to gaseous form and the remaining is called 'ash'. The ash contains all of the following, except.

(1) Calcium (2) Magnesium

(3) Sulphure (4) Nucleic acid

30. Pigments are considered as the secondary metabolites, having some particular functions. Which of the following is an example of pigments?

(1) Carotenoids (2) Codeine

(3) Concanavalin-A (4) Curcumin

31. Which of the following is/are good source of different type of secondary metabolites?

(1) Plants (2) Fungi

(3) Animals (4) Both (1) and (2)

32. Which of the following can not be considered as the example of polymeric substances?

(1) Rubber (2) Gums

(3) Cellulose (4) Vinblastin

33. Match the following with their suitable groups.

Column-A		Column-B	
(a)	Drugs	(i)	Morphine
(b)	Toxins	(ii)	Lemon grass oil
(c)	Terpenoides	(iii)	Abrin
(d)	Alkaloides	(iv)	Vinblastin
		(v)	Diterpens

(1) a-iv, b-iii, c-v, d-i (2) a-v, b-iii, c-ii, d-i

(3) a-iii, b-iv, c-i, d-ii (4) a-iv, b-i, c-v, d-iii

34. Select the correctly matched.

(1) Anthocyanins - Alkaloids

(2) Carotenoids - Toxins

(3) Ricin - Drugs

(4) Lemon grass oil - Essential oils.

35. Which of the following amino acid having H(Hydrogen) as R group?

(1) Glycine (2) Alanine

(3) Serine (4) Leucine

36. Which of the following statements is correct with reference to amino acids?

(1) These are substituted methane

(2) They contains α-carbon hance called α-amino acids

(3) Variable group of amino acid is designated as R-group

(4) All of the above

37. Amino acids are basically classified into different groups; mainly bassed on which of the following?

(1) Nature of R group

(2) Number of amino group

(3) Number of caboxylic group

(4) All of the above

38. Physical and chemical properties of amino acids depend on

(1) Amino group

(2) Carboxylic group

(3) R-group

(4) All of the above

39. Which of the following is acidic amino acid.

(1) Glutamic acid

(2) Aspartic acid

(3) Ascorbic acid

(4) Both (1) and (2)

40. Which of the following amino acid is/are basic in nature?

(1) Lysine (2) Arginine

(3) Histidine (4) All of the above

41. Which of the following is not the example of aromatic amino acid?

(1) Tyrosin (2) Tryptophan

(3) Threonin (4) Phenylalanine

42. Which of the following statements is not correct with reference to amino acid?

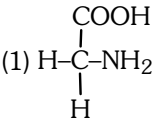
(1) NH_2 group of amino acids having ionizable nature.

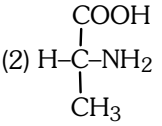
(2) COOH group of amino acids having ionizable nature.

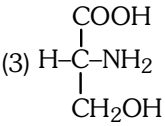
(3) The structure of amino acids changes in solutions of different pHs

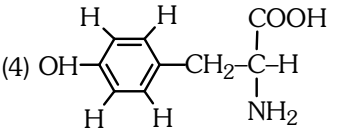
(4) Amino acids found in protein belong to D-forms mostly

43. Which of the following structures represents serine?

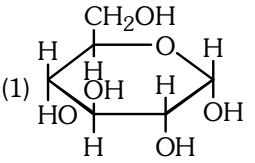
(1) 

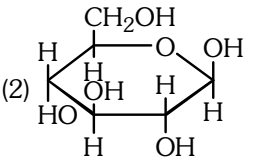
(2) 

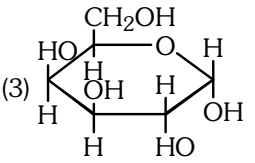
(3) 

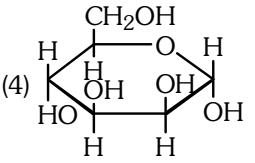
(4) 

44. Which of the following is the structure of α-D-glucose?

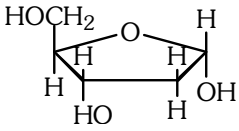
(1) 

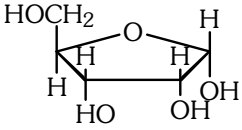
(2) 

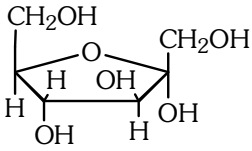
(3) 

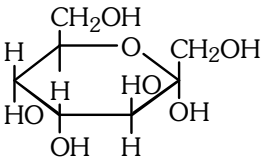
(4) 

45. Which of the following represents the structure of Ribose ?

(1) 

(2) 

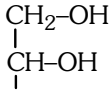
(3) 

(4) 

46. Which of the following is the molecular formula of Palmitic acid ?

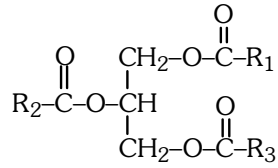
(1) $CH_3(CH_2)_2COOH$ (2) $CH_3(CH_2)_{14}COOH$

(3) $CH_3(CH_2)_{16}COOH$ (4) $CH_3(CH_2)_{18}COOH$

47.  is the structure of which of the following compounds?

(1) Glyceraldehyde (2) Glycerol

(3) Glyceric acid (4) Triglycerides

48. 

The given structure represents the structure of tri-aster derivative while R_1, R_2 and R_3 is/are :

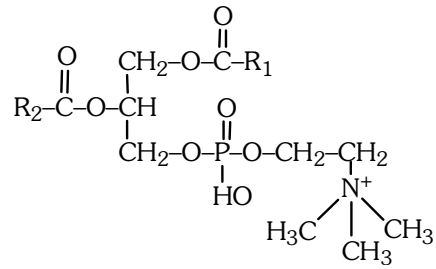
(1) Fatty acid, Amino acid & Adenylic acid respectively.

(2) Amino acid, Fatty acid and Phosphoric acid respectively.

(3) Fatty acids only.

(4) Amino acid, Glucose & Lactic acid respectively.

49. The structure given below is the structure of which of the following compounds.



(1) Lecithin (Phosphatidyl choline)

(2) Cephaline (Phosphatidyl serine)

(3) Kephaline (Phosphatidyl ethanol amine)

(4) Phosphosphingomyelins.

ANSWERS KEY

Que.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Ans.	2	3	3	3	3	1	1	3	2	2	4	2	1	1	2	4	4	4	4	3
Que.	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Ans.	2	3	4	3	2	3	3	3	4	1	4	4	1	4	1	4	1	4	4	4
Que.	41	42	43	44	45	46	47	48	49											
Ans.	3	4	3	1	2	2	2	3	1											