1. By which bond, the polypeptide chains are joined in tertiary structure of protein ?

[P] Van der Waal's attraction.

[Q] H- bond

[R] Ionic bond

[S] Disulphide bond.

(A) P, Q and S

(B) Only Q

(C) P, Q, R and S

(D) P and Q

2. Fat $\xrightarrow{\text{Hydrolysis}}$ Carboxylic acid + Alcohol.

Which of the following will make the reaction to occur very rapidly ?

(A) Emulsin

(B) Invertase

(C) Maltase

(D) Lipase

3. Ascorbic acid is a .....

(A) Vitamin

(B) Protein

(C) Nucleic acid

(D) Hormone

4. Which one of the following is not a semi-synthetic polymer ?

(A) Resin

(B) Rayon

(C) Vulcanised rubber

(D) Cellulose nitrate

5. Which compound is not a derivative of Carboxylic acid ?

(A) Amide

(B) Aldehyde

(C) Anhydride

(D) Acid chloride

6. Which of the following substances on oxidation gives product having one carbon atom less ?

(A) Ethanol

(B) Acetone

(C) Ethanoic acid

(D) Ethanal

7. Which compound gives substance of foul smell by reacting with chloroform in alkaline medium ?

(A) Dimethyl amine

(B) Trimethyl amine

(C) Acetamide

(D) Methyl amine

8. Which substance has the highest boiling point ?

(A) Trimethyl amine

(B) Ethyl methyl amine

(C) Propyl amine

(D) Propane

9. The negative value for slope of the graph of concentration of reactant [R] $\rightarrow t$ indicates .....

(A) First order reaction.

DOUBTFULL

(B) Instantaneous rate.

(C) Both zero order reaction and instantaneous rate.

(D) Zero order reaction.

10. The unit of K for pseudo first order reaction is .....

(A) mol^{-1} lit $minute^{-1}$

(B) mol lit^{-1} $minute^{-1}$

(C) mol^{-2} lit^{2} $minute^{-1}$

(D) $minute^{-1}$

11. For which of the following reactions, Oswald's isolation method is useful for determination of order of the reaction ?

(A) $H_2O_{2\,(l)} \rightarrow H_2O_{(l)} + \frac{1}{2}O_{2(g)}$

(B) $5Br^{-1}_{(aq)} + BrO_3^-{}_{(aq)} + 6H^+_{(aq)} \rightarrow 3Br_{2\,(aq)} + 3H_2O_{(l)}$

(C) All the three given options.

(D) $N_2O_{5(g)} \rightarrow 2NO_{2(g)} + \frac{1}{2}O_{2(g)}$

12. The half life period of the reaction $H_2 + I_2 \rightarrow 2HI$ is proportional to ..... .

(A) the square of initial concentration.

(B) inverse of initial concentration.

(C) independent of initial concentration.

(D) initial concentration.

13. What should be the co-ordination number and geometrical shape of $K[Cr(NH_3)_2(CO_3)_2]$ complex ?

(A) 4, Square planar

(B) 6, Octahedral

(C) 6, Trigonal Bipyramidal

(D) 4, Tetrahedral

14. Wilkinson's catalyst is used in ..... .

(A) Condensation

(B) Halogenation

(C) Dehydrogenation

(D) Polymerisation

15. Which compound does not undergo aldol condensation ?

(A) Monochloro acetaldehyde

(B) Dichloro acetaldehyde

(C) Trichloro acetaldehyde

(D) Acetaldehyde

16. Which reagent does not reduce Ketone ?

(A) $Zn \cdot Hg$ + conc. HCl

(B) $NH_2 \cdot NH_2 + HCl$

(C) $Mg \cdot Hg + H_2O$

(D) $NH_2 \cdot NH_2 + KOH$

17. For the reaction A + B → products,

$$-\frac{d[A]}{dt} = x.e^{-E_a/RT}$$, what is x ?

(A) Molecularity.

(B) Avogadro number.

(C) Rate constant.

(D) Collision frequency.

18. Which of the following will have less value than zero during adsorption ?

(A) ΔH

(B) ΔS

(C) All the given three options.

(D) ΔG

19. Which phenomenon will occur when water is added to anhydrous Calcium chloride ?

(A) Adsorption

(B) Desorption

(C) Sorption

(D) Absorption

20. Which option is not applicable to physical adsorption ?

(A) It is irreversible.

(B) Multi-molecular layers are formed in it.

(C) The value of E_a is comparatively low.

(D) It is instantaneous.

21. The charge and the number of co-ordination site in EDTA is ..... respectively.

(A) $-6,\ 6$

(B) $-4,\ 6$

(C) $4,\ 4$

(D) $-4,\ 4$

22. Which of the following complex ions is not expected to absorb visible light ?

(A) $[Cr(NH_3)_6]^{3+}$

(B) $[Fe(H_2O)_6]^{2+}$

(C) $[Ni(H_2O)_6]^{2+}$

DOUBTFULL

(D) $[Ni(CN)_4]^{2-}$

23. Which complex has the maximum conductivity in its aqueous solution ?

(A) $Fe_3[Fe(CN)_6]_2$

(B) $(NH_4)_2[MoO_4]$

(C) $K_2[Cr_2O_7]$

(D) $K_3[Fe(CN)_6]$

24. Which ligand does not form chelate compound ?

(A) Ethane – 1, 2 – diamine.

(B) Propane – 1, 2 – diamine.

(C) Oxalate ion.

DOUBTFULL

(D) Ethanamine.

Rough

25. Which substance is not used as food preservative ?

(A) Sugar

(B) Sodium benzoate

(C) Sodium acetate

(D) Common salt

26. Which is the sweetest substance ?

(A) Saccharin

(B) Alitame

(C) Sucralose

(D) Aspartame

27. Choose correct option for the given statements :

(For correct : T, incorrect : F)

(i) Ester is obtained as a by-product during preparation of soap.

(ii) Soap converts into fatty acid in acidic medium.

(iii) Soap forms foam with hard water.

(A) FTF

(B) FTT

(C) TFT

(D) TFF

28. Which of the following is not a bio-polymer ?

(A) Protein.

(B) Butyl rubber

(C) Nucleic acid.

(D) Polysaccharide.

29. Which statement is incorrect about catalyst ?

(A) The effect of catalyst is selective.

(B) It decreases energy barrier.

(C) It decreases the value of equilibrium constant.

(D) It increases the rate of reaction.

30. Rubber is a ..... colloid.

(A) Multi-molecular

(B) Associated

(C) Lyophilic

(D) Lyophobic

31. By which of the following methods, Sulphur sol can be prepared ?

(A) Exchange of solvent.

(B) Dissolution.

(C) All the given three options.

(D) Oxidation.

32. The theoretical magnetic moment of a compound of Co_{27} is 3.87 B.M. Which one is the correct compound from the following ?

(A) $[CoF_6]^{2-}$

(B) $CoCl_3$

(C) $[Co(NH_3)_6]^{3+}$

(D) $Co(NO_3)_2$

33. Which of the following is used in gas lighters ?

(A) Pyrophoric misch metal.

(B) Gadolinium sulphate.

(C) Acid compounds.

(D) CeO_2

Rough W

34. Which initiator is used for free radical addition polymerisation reaction ?

(A) Acetyl peroxide

(B) Acid

(C) Sulphate salt

(D) Base

35. Which of the following statements is incorrect ?

(A) Orlon is useful in making of synthetic wool.

(B) Butyl rubber is a linear polymer.

(C) Dacron is copolymer.

(D) Dextran is a biodegradable polyamide polymer.

36. Which polymer is used as lubricant & insulator both ?

(A) Polythene

(B) Poly styrene

(C) Teflon

(D) PVC

37. Which of the following detergent is used in hair conditioner ?

(A) L A S

(B) Cetyl trimethyl ammonium bromide

(C) Sodium lauryl sulphate.

(D) A B S

38. Which drug is used for prevention of impregnation ?

(A) Terfenadine

(B) Veronal

(C) Aspirin

(D) Mestranol

39. Gattermann reagent is .....

(A) $SnCl_2 + HCl$

(B) Cu powder / HCl

(C) $Cu + NaNO_2$ *(aq)*

(D) CuCl / HCl

40. Which is different from others ?

(A) Dextrin

(B) Cellulose

(C) Stachyose

(D) Glycogen

41. Which is the reagent whose reaction with glucose indicates the presence of Carbonyl group in it ?

(A) Conc. HNO_3

(B) $(CH_3CO)_2O$

(C) HI

(D) NH_2OH

42. Fructose has a specific rotation $-92.4°$. An aqueous solution of Fructose has an observed rotation of $-27.7°$, when placed in a polarimeter tube of 10 cm long. How much amount of Fructose is dissolved in 100 ml of aqueous solution ?

(A) 33.3 gm

(B) 29.9 gm

(C) 3.33 gm

(D) 3.0 gm

43. Which reaction is not used to prepare 1° amine ?

(A) Hofmann reaction.

(B) Reduction of isocyanide.

(C) Reduction of nitrobenzene.

(D) Gabriel phthalimide synthesis.

44. IUPAC name of $CH_3 - \underset{\displaystyle C_2H_5}{\overset{\displaystyle |}{N}} - C_3H_7$ is .....

(A) N- ethyl - N- methyl - propane -1- amine.

(B) N- ethyl - N- propyl methanamine.

(C) N- methyl - N- propyl - ethanamine.

(D) N- methyl pentanamine.

45. Which reagent is added to the solution of benzene diazonium chloride in order to get orange dye at 273-278 K temperature ?

(A) Aniline / HCl

(B) Dimethyl aniline / HCl

(C) Phenol / NaOH

(D) β Napthol / NaOH

46. Which statement is not correct for Ethane nitrile ?

(A) It gives ester by reacting with ethanol in presence of conc. H_2SO_4.

(B) Its boiling point is less than methyl carbyl amine.

(C) Its reduction gives 1° amine.

(D) It is very weak base.

47. Choose correct option for the statements given below.
(Correct statement - T , incorrect statement - F)

(i) Electronic configuration of transition metal ion is suitable for formation of complexes.

(ii) A chemical bond is formed between non-metal and metal atoms in interstitial compounds.

(iii) Crystal structures of Cu and Au are different.

(A) FTT (B) TFT

(C) TTF (D) TFF

48. Which colour will be observed when Manganese dioxide is fused with KOH in presence of O_2 ?

(A) Green

(B) Orange

(C) Red

(D) Purple

49. Which isomerism is shown by Penta ammine nitro Cobalt (III) ion and Penta ammine nitrito Cobalt (III) ion ?

(A) Cis - trans isomerism.

(B) Optical isomerism.

(C) Ionisation isomerism.

(D) Linkage isomerism.

50. The type of hybridisation for central metal ion in an aqua complex formed by dissolving $NiCl_2$ in water is ....

(A) sp^3d^2

(B) sp^3

(C) dsp^2

(D) d^2sp^3