

Government of Maharashtra's
Ismail Yusuf college of arts, science and commerce.

Department of Chemistry

Class: TYBSc

Sub-Organic Chemistry

Semester-VI

Unit-I and II

Sr. No Multiple choice Question.

- The repeating units of proteins are.....
a) glucose units b) **amino acids** c) fatty acids d) peptides
- Amino acids are joined by..... Bond.
a) glycosidic b) ionic c) hydrogen d) **peptide**
- ___ are found in living cells of plant and animals.
a) lipids b) minerals c) protein d) carbohydrates
- Classification of the protein in two stages depends on.....
a) **structures & functions** b) Types of amino acid
c) number of amino acid d) None of these
- The most common secondary structure is.....
a) **alpha helix** b) beta pleated sheet c) beta pleated sheet parallel
d) beta pleated sheet antiparallel
- Silk fibroin consists of polypeptide chains arranged in
a) Alpha helix b) **beta pleated sheet** c) beta helix d) none of these
- Alpha helix has.....
a) 3.4 amino acid Residue per turn b) **3.6 amino acid Residue per turn**
c) 3.8 amino acid Residue per turn d) 3.0 amino acid Residue per turn
- Tertiary structure is maintained by.....
a) peptide Bond b) hydrogen bond c) di-sulfide Bond d) **all of the above**
- Hemoglobin protein has which structure.
a) primary structure b) secondary structure c) tertiary structure
d) **quaternary structure**
- myoglobin is a
a) protein with primary structure b) protein with secondary structure
c) **protein with tertiary structure** d) protein with quaternary structure
- The primary structure of protein represents
a) linear sequence of amino acids joined by peptide Bond

- c) helical structure of protein b) 3-D structure of protein
d) subunit structure of protein
- 12 enzymes are biologically active.....
- a) proteins b) carbohydrates c) nucleic acids d) DNA molecule
- 13 *ortho* disubstituted benzene shows absorption at cm^{-1} .
- a) **774-735** b) 800-750 c) 840-810 d) all of these
- 14 Positively charged basic amino acids are.....
- a) lysine and arginine b) lysine and asparagine c) glutamine and arginine
d) lysine and glutamine
- 15 Acidic amino acids include.
- a) arginine & glutamate b) aspartate & asparagine
c) aspartate & lysine d) **aspartate & glutamate**
- 16 amino acids with hydroxyl group are.
- a) serine and alanine b) alanine & valine c) **serine & threonine**
d) valine & isoleucine
- 17 Identify the amino acids containing nonpolar, aliphatic R groups.
- a) **Phenylalanine, tyrosine, & tryptophan** b) glycine, alanine, leucine
c) lysine, arginine, histidine d) serine, threonine, cysteine
- 18 which among the following is non- essential amino acid?
- a) Serine b) Threonine c) Lysine d) Histidine
- 19 which of the following is an essential amino acid?
- a) Glutamine b) **Phenylalanine** c) Asparagine d) Cysteine
- 20 Zwitter ions contain Charge.
- a) **Positive and negative** b) only positive c) only positive d) no charge
- 21 Keratin has.....
- a) **parallel beta-pleated structure** b) antiparallel beta-pleated structure
c) Alpha helix d) none of these
- 22 Alanine is an example of amino acid.
- a) Basic b) **neutral** c) acidic d) all of these
- 23 Amino acids containing one amino group and one Carboxyl group are called
___ amino acid.
- a) Acidic b) Basic c) **Neutral** d) None of these
- 24 Carbohydrates are.....

- a) polyhydroxy aldehyde and phenol b) polyhydroxy Ketone and alcohol.
 c) **polyhydroxy aldehyde and ketone** d) polyhydroxy phenols and alcohols
- 25 Linkage between two monosaccharide is.....
 a) ionic bond b) covalent bond. c) hydrogen bond. d) **glycosidic Bond**
- 26 Number of possible isomers of glucose is.....
 a) 10 b)14 c)16 d) 20
- 27 glycogen on hydrolysis gives
 a) Starts b) amylopectin c) **glucose** d) amylose
- 28 which of the following are all disaccharides?
 a) **maltose, sucrose, lactose** b) glycogen, lactose, glucose
 c) starch, maltose, lactose d) cellulose, starch, Cellobiosis
- 29 Glucose and Fructose are
 a) geometrical isomers b) tautomer c) chain isomers d) **functional isomers**
- 30 which element is used to motion picture film?
 a) **cellulose acetate** b) glucose acetate c) starch acetate d) Sucrose acetate
- 31 oxidation of glucose with concentration HNO_3 gives.....
 a) lactic acid b) **saccharic acid** c) gluconic acid d) tartaric acid
- 32 starch is polymer, its monomer is.....
 a) **glucose** b) fructose c) xylose d) ribose
- 33 when glucose heated with phenylhydrazine a yellow crystalline solid is obtain
 this compound is
 a) gluco phenylhydrazine b) **glucosazone** c) mannitol d) fructose
- 34 which of the following terms does not have any relationship with glucose:
 a) Aldose b) aldohexose c) **ketohexose** d) monosaccharides
- 35 which of the following is not disaccharide?
 a) maltose b) sucrose c) lactose d) galactose
- 36 glucose will show mutarotation when solvent is
 a) acidic b) basic c) neutral d) **amphoteric**
- 37 which of the following monosaccharide is pentose?
 a) glucose b) Fructose c) galactose d) **Arabinose**
- 38 The number of asymmetry carbon atom in glucose molecule is.....
 a) 3 b) **4** c) 5 d) 2
- 39 after the osazone test the simple sugar gave needle shape crystals, the simple
 sugar will be

- a) **glucose** b) fructose c) maltose d) cellulose
- 40 Which of the following a non-reducing sugar.
a) maltose b) lactose c) Trehalose d) cellulose
- 41 glucose on oxidation with bromine water forms
- a) glucuronic acid b) glucosaccharic acid c) **gluconic acid** d) mannose
- 42 which of the following is an epimeric pairs?
a) D-glucose & D-mannose b) **D-glucose & L-glucose**
c) D glucose & Dgalactose d) both a and b
- 43 Bial's test is used to detect the presence of
- a) Triose b) Tetrose c) **Pentose** d) Hexose
- 44 The glycosidic linkage between glucose molecule in maltose are
- a) beta 1-4 b) Alpha 1-2 c) Alpha 1-4 d) Beta 1-2
- 45 Glycogen in animals are stored in.....
- a) **liver and spleen** b) liver and muscles c) liver and bile
d) liver and adipose tissue
- 46 sucrose is a disaccharide consisting of.....
- a) Glucose & Glucose b) Glucose & Galactose
c) **Glucose & Fructose** d) Glucose & Mannose
- 47 When methyl glucopyranoside reacts with periodic acid, how many moles of the oxidizing agent are consumed per mole of the sugar?
a) 2 b) 1 c) 3 d) **4**
- 48 alpha D(+)Glucose and beta D(+)Glucose are
- a) enantiomers b) geometrical Isomers c) epimers d) **anomers**
- 49 The reduction of D(+)Fructose with NaBH₄ give.....
- a) **Sorbitol + Mannitol** b) Sorbitol c) Mannitol d) None of these
- 50 The nomenclature of carbohydrates is very often and, in the suffix
- a) -one b) -ose c) -ol d) -al

Unit-III

- | Sr. No | Question |
|--------|--|
| 1 | Magnetic anisotropy brings about of acetylenic proton.
a) shielding b) deshielding c) exchange d) splitting |
| 2 | Intense absorption band around 1700 cm^{-1} indicates presence of Group
a) OH b) CN c) C=O d) SH |
| 3 | The region is known as fingerprint region.
a) $2000-1000\text{ cm}^{-1}$ b) $2000-400\text{ cm}^{-1}$ c) $3000-1000\text{ cm}^{-1}$ d) $1400-600\text{ cm}^{-1}$ |
| 4 | A peak around due to carbon-carbon triple bond stretching vibration.
a) 3300 cm^{-1} b) 2100 cm^{-1} c) 1700 cm^{-1} d) 690 cm^{-1} |
| 5 | class of compound show strong IR absorption near 1600 cm^{-1} .
a) Amine b) alcohol c) aldehyde d) alkene |
| 6 | class of compound show broad IR absorption peak at $3200-3600\text{ cm}^{-1}$.
a) Amide b) alcohol c) aldehyde d) alkene |
| 7 | the derivative of carboxylic acid which shows two strong absorption in a region around 1775 cm^{-1} is
a) Amide b) ester c) acid halide d) anhydride |
| 8 | The types of radiations used in NMR spectroscopy is
a) ultraviolet light b) visible light c) radio waves d) microwaves |
| 9 | How many signals do you expect in NMR spectrum of toluene?
a) one b) two c) three d) four |
| 10 | The acidic proton of carboxylic acid is found at in NMR.
a) $0-2.0\text{ ppm}$ b) $2.5-4.5\text{ ppm}$ c) $8.0-9.0\text{ ppm}$ d) $10-12\text{ ppm}$ |
| 11 | What will be the index of hydrogen deficiency for organic compound with molecular formula $\text{C}_5\text{H}_9\text{N}$ is
a) 2 b) 3 c) 1 d) 4 |
| 12 | For linear polyatomic molecule the number of possible modes of vibration is given by.....
a) $(3n-5)$ b) $(3n-6)$ c) $(3n+5)$ d) none of this |
| 13 | <i>ortho</i> disubstituted benzene shows absorption at cm^{-1} . |

- 14 b) **774-735** b) 800-750 c) 840-810 d) all of these
meta disubstituted benzene shows absorption at cm^{-1} .
- 15 a) 774-735 b) **800-750** c) 840-810 d) all of these
para disubstituted benzene shows absorption at cm^{-1} .
- 16 a) 774-735 b) 800-750 c) **840-810** d) all of these
 is not in plane vibration.
- 17 a) Symmetric stretching c) symmetric bending
 b) Asymmetrical stretching d) **wagging**
 is not out of plane vibration
- 18 a) Rocking b) scissoring c) Twisting d) asymmetric stretching
 Symmetrical bending is also called.....
- 19 a) Rocking b) **scissoring** c) wagging d) twisting
 The IR spectrum of solid sample is recorded by using..... halide pellets.
- 20 a) **Alkali** b) Alkaline c) both a and b d) none of these
 is not IR active molecules
- 21 a) HCl b) **N₂** c) CHCl₃ d) CO
 is IR active molecule.
- 22 a) Cl₂ b) H₂ c) CO₂ d) **HCl**
 is internal standard used to record NMR spectrum.
- 23 a) **TMS** b) DMSO d-6 c) CDCl₃ d) CCl₄
 Solvent is not used solvent to record NMR spectrum.
- 24 a) CS₂ b) trifluoroacetic acid c) CDCl₃ d) **CH₂Cl₂**
 Ring current effect causes of aromatic protons.
- 25 a) Shielding b) **deshielding** c) splitting d) both a and c
 The distance between peaks of multiples is called
- 26 a) chemical shift b) **coupling constant** c) both a and b d) none of these
 The value of coupling constant (*J*) of trans proton of olefin is
- 27 a) 7 MHz b) 10 MHz c) 2 MHz d) **15 MHz**
 The value of coupling constant (*J*) of geminal proton of olefin is
- 28 a) 7 MHz b) 10 MHz c) **2 MHz** d) 15 MHz
 The value of coupling constant (*J*) of *ortho* proton of benzene is
- 29 a) 7 MHz b) **8 MHz** c) 2 MHz d) 15 MHz
 What is the chemical shift for assign (Ph-**H**) proton in ¹H NMR.
 1.3-1.4 ppm b) **6.5-7.5 ppm** c) 10-11 ppm d) 2.1-2.6ppm

- 30 What is the chemical shift for the assign proton $\text{H}_2\text{C}=\text{CH}-\underline{\text{C}}\text{H}_3$ in ^1H NMR?
 a) 1.3-1.4 ppm b) 6.0-7.5 ppm c) 10-11 ppm d) **2.1-2.6ppm**
- 31 What is the chemical shift of $(\text{Ph}-\underline{\text{C}}\text{H}_3)$ the assign proton in ^1H NMR?
 a) 1.3-1.4 ppm b) 6.0-7.5 ppm c) 10-11 ppm d) **2.2-2.5 ppm**
- 32 The chemical shift of aldehydic proton in ^1H NMR is
 a) 6.0-7.5 ppm b) 3.3-3.9 ppm c) **9.0-10.0 ppm** d) 2.2-2.5 ppm
- 33 The multiplicity of assign proton of $\text{CH}_3-\underline{\text{C}}\text{H}_2\text{O}-\text{CH}_3$ shows in ^1H NMR.
 a) Multiplet b) doublet c) **quartet** d) singlet
- 34 The assign proton of $\text{Cl}-\underline{\text{C}}\text{H}_2-\text{CH}_2\text{COOH}$ shows multiplicity in ^1H NMR.
 a) multiplet b) doublet c) quartet d) singlet
- 35 How many signals do you expect in NMR spectrum of *para* xylene?
 a) one b) **two** c) three d) four
- 36 A peak appears around cm^{-1} due to $\text{C}=\text{C}$ double bond stretching vibration.
 a) 2800 b) 2100 c) **1600** d) 750
- 37 A peak appears around cm^{-1} due to $\text{C}-\text{O}$ single bond stretching vibration.
 a) **1020-1075** b) 2100-2200 c) 1600-1700 d) 650-700
- 38 Alkane shows strong absorption band at in IR spectrum.
 a) 1715 b) **2850-2960** c) 1600-1700 d) 650-700
- 39 What will be the index of hydrogen deficiency for organic compound with molecular formula $\text{C}_7\text{H}_8\text{O}_2$ is
 a) 2 b) 3 c) 1 d) **4**
- 40 The structure of the compound which gives single peak in ^1H NMR having molecular formula $\text{C}_2\text{H}_6\text{O}$ will be
 a) $\text{CH}_3-\text{CH}_2-\text{OH}$ b) **$\text{CH}_3-\text{O}-\text{CH}_3$** c) both a and b d) none of this
- 41 Sugar in nucleic acids are
 a) Aldotetrose b) **aldopentose** c) aldohexose d) all of this
- 42 Sugars in ribose and deoxyribose are.....
 a) Aldotetrose b) **aldopentose** c) aldohexose d) all of this
- 43 Nucleic acid on partial hydrolysis gives nucleotides and
 a) nucleotides b) nucleosides c) cytoplasm d) **both a and b**
- 44 Nucleic acid on complete hydrolysis gives sugar bases and
 a) hydrochloric acid b) **phosphoric acid** c) acetic acid d) all of this

- 45 DNA contains sugar called.....
a) D(-) ribose b) **2-Deoxy D (-) ribose** c) denatured ribose d) None of this
- 46 Guanine and adenine are derivatives of
a) Pyrimidine b) **purine** c) piperidine d) all of this
- 47 Cytosine and thymine are derivatives of.....
a) **pyrimidine** b) purines c) piperidine d) all of this
- 48 RNAs do not contain the heterocyclic bases....
a) Uracil b) adenium c) **thiamine** d) guanine
- 49 Nucleotide is a phosphoric ester of
a) **nucleoside** b) nucleophile c) nucleosome d) all of this
- 50 DNA do not contain the heterocyclic bases....
a) **Uracil** b) adenium c) thiamine d) guanine
- 51 In DNA the amount of adenine is equal to.....
a) Guanine b) cytosine c) **thymine** d) None of this
- 52 In DNA the amount of guanine is equal to.....
a) Adenine b) **cytosine** c) thymine d) None of this
- 53 In double helix structure of DNA the width of major groove is
a) 6Å b) **12Å** c) 2Å d) 10Å
- 54 In double helix structure of DNA guanine(G) and cytosine form.....
hydrogen bonds with each other.
a) 2 b) **3** c) 1 d) 4
- 55 In double helix structure of DNA adenine(A) and thymine(T) form.....
hydrogen bonds with each other.
a) **2** b) 3 c) 1 d) 4
- 56 In RNA the two successive ribonucleotides are linked through ... bonds.
a) Hydrogen b) Covalent c) **phosphodiester** d) weak forces
- 57 Nucleoside, adenosine composed of.....
a) **Ribose + adenine** b) ribose + guanine c) ribose + uracil d) ribose + cytosine
- 58 In double helix structure of DNA the width of minor groove is
a) **6Å** b) 12Å c) 2Å d) 10Å

- 59 In double helix structure of DNA each turn of helix have..... width.
 a) 6Å b) 10Å c) 2Å d) **20Å**
- 60 In double helix structure of DNA, the height of each turn of helix is

 a) **34Å** b) 25Å c) 6Å d) 20Å

Unit-IV

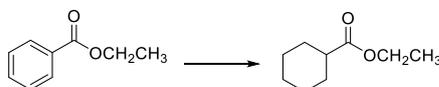
Sr. No. Questions

- 1 Polymers are
 a) Micromolecule b) **macromolecule** c) both a & b d) none of this
- 2 A process in which large number of small molecules combine to give giant molecule is called.....
 a) Hydrolysis b) **polymerization** c) hydrogenation d) none of this
- 3 Is a example of natural rubber.
 a) Nylon b) terylene c) plastic d) **silk**
- 4 Is example of synthetic polymer.
 a) wool b) **terylene** c) protein d) silk
- 5 Homopolymers are polymers of types of monomers.
 a) Two b) **single** c) three d) both a and c
- 6 Saran is the example of type of polymer.
 a) Homopolymer b) **copolymer** c) both a & b d) none of this
- 7 Is a type of copolymer.
 a) Random b) Block c) homomers d) **both a & b**
- 8 is a example of thermoplastics.
 a) Melmac b) polyethene c) polystyrene d) **both b & c**
- 9 is a example of thermosets plastics.
 a) **melmac** b) polyethene c) nylons d) both b & c
- 10 High Density Polyethylene (HDPE) is prepared by polymerization of ethene using..... catalyst.
 a) Wilkinson's b) **Ziegler-Natta** c) Wohl-Ziegler d) none of this
- 11 is used in manufacture of raincoat.
 a) **Polyvinyl chloride** b) polyethene c) polystyrene d) both b and c

- 12 Monomer of styrene is prepared from ethene and benzene byreaction.
- a) **Friedel-Craft alkylation** c) Friedel-Craft acylation
b) Nucleophilic substitution d) both b and c
- 13 In condensation polymerization two monomers reacts with each other to eliminate Molecule.
- a) Water b) alcohol c) **both a & b** d) none of this
- 14 ϵ -caprolactum is a monomer used in synthesis of
- a) **Nylon 6** b) nylon 66 c) polyester d) polyurethane
- 15 **Nylon 66 is prepared from**
- a) ϵ -caprolactum b) **adipic acid** c) cyclohexanol d) none of this
- 16 Di-isocyanate is a monomer used in synthesis of
- a) Nylon 6 b) nylon 66 c) polyester d) **polyurethane**
- 17 Polymer is used in bike helmets, safety goggles and bullet proof glass.
- a) **Polycarbonates** b) polyethene c) polyester d) polyurethane
- 18 Is used in coating cookware for making nonstick utensils.
- a) **Teflon or PTFE** b) polyethene c) polyester d) polyurethane
- 19 Bakelite is a crossed-linked polymer obtained from and
- a) Novolac resin and phenol c) **Novolac resin and excess of formaldehyde**
b) Phenol and formaldehyde d) none of this
- 20 stereoisomers of polymers side chains are arranged alternatively on either side of polymeric chain.
- a) Isotactic b) syndiotactic c) atactic d) all of this
- 21 **is a repeating unit in natural rubber.**
- a) Terpene b) **isoprene** c) ethene d) acetylene
- 22 Rubber is obtained by copolymerization of styrene and butadiene in 1:3 proportion.
- a) Neoprene b) polyisoprene c) **Buna-S** d) all of this
- 23 Natural rubber are used in tyres making by process.
- a) Polymerization b) condensation c) **vulcanization** d) none of this
- 24 To increase the flexibility of polymer is added.
- a) Stabilizers b) Fillers c) **plasticizers** d) all of these

- 25 Fillers are added to polymer which increase the Of polymer.
 a) Stability b) flexibility c) **bulk** d) all of these
- 26 Polyhydroxyalkanoates(PHAs) is the example of polymer.
 a) Synthetic b) **biodegradable** c) resin d) none of these.
- 27 For replacement of heart valves rubber is used.
 a) Polyester b) **silicon rubber** c) polytetraethylene d) polycarbonate
- 28 **Can be used as artificial skin.**
 a) **Poly α -cyanoacrylate** b) vinyl resin c) polyurethane d) epoxy resin
- 29 Hydroxy ethyl methacrylate is used in
 a) Bones fracture b) Hard contact lens c) **soft contact lens** d) artificial kidney
- 30 Trans polyisoprene is called.....
 a) Glyptal b) **Gutta-percha** c) Melamine d) Buna-S
- 31 When catalyst and reactant are exist in same phase is called.....catalysis.
 a) Heterogeneous b) **homogeneous** c) both a & b d) precatalyst

32



This conversion is carried out by using Catalyst

- a) NaBH_4 b) **Raney Ni/ H_2** c) LiAlH_4 d) None of these

33



This conversion is carried out by using Catalyst.

- a) B_2H_6 b) **H_2 -PtO $_2$, $\text{CH}_3\text{CO}_2\text{H}$** c) LiAlH_4 d) None of these