|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Question** | **Answer1** | **Answer2** | **Answer3** | **Answer4** |
| A reaction giving predominantly one enantiomer out of a set of possible enantiomers is called as \_\_\_\_\_\_\_\_\_\_. | (f,e) reaction | (d,e) reaction | (p,e) reaction | (e,e) reaction |
| In stereoselective reactions, the stereochemical nature of the product does not depend on the \_\_\_\_\_\_\_\_\_\_ of the reactant. | acidity | stereochemical nature | basicity | electrochemical |
| If a particular enantiomer gives a specific enantiomeric product on reaction, then it is called as \_\_\_\_\_\_ reaction. | enantiotopic | enantiospecific | diastereoselective | diastereospecific |
| The characteristic of the SNi reaction is it \_\_\_\_\_\_\_\_\_\_ | Follow first order kinetics | Follow Intermolecular mechanism | Follow zero order kinetics | Follow second order kinetics |
| Bromination of an alkene is an example of \_\_\_\_\_\_\_\_\_\_\_\_\_ | Cis addition | Trans addition | Nucleophilic addition | Syn addition |
| Partial reduction of but-2-yne using Hydrogen in presence of Pd supported on BaSO4 gives cis but-2-ene as major product; the reaction can be classified as \_\_\_\_\_\_\_\_\_\_\_\_\_ | Enantiomeric excess | Diastereomeric excess | enantiospecific | diastereospecific |
| Bromination of a nonterminal alkene is an example of \_\_\_\_\_\_\_\_\_\_\_\_ reaction. | Non- Stereoselective | Enantioselective | Non -stereospecific | Both stereo selective and stereospecific |
| Base induced dehydrohalogenation of 1-bromo-1,2-diphenyl propane follows \_\_\_\_\_\_\_ | Syn elimination | Anti elimination | Cis elimination | Two step elimination |
| The SNi reaction gives a retention of configuration of the product is accounted for the formation of \_\_\_\_\_\_\_\_\_\_\_\_\_\_ | carbanion | Alkyl chlorosulphite | Intimate ion pair | carbocation |
| The reactions like SN2 are completely \_\_\_\_\_\_\_\_\_\_\_\_\_\_ and hence \_\_\_\_\_\_\_\_\_\_\_\_\_. | Stereoselective, at times stereospecific | Stereospecific, Stereoselective | Stereoselective, never stereospecific | Stereoselective, cannot predict about stereospecificity |
| Aldehyde reacts with HCN in presence of ammonia to yield α-aminonitrile as intermediate. This is part of \_\_\_\_\_\_\_\_\_\_\_\_\_\_. | Gabriel’s Synthesis | Strecker Synthesis | Azalactone Synthesis | Amidomalonate Synthesis |
| Secondary structure of a protein gives an information about \_\_\_\_\_\_\_ | How are polypeptide chains held each other and their conformations | The number of each amino acid present in the chain | The sequence of amino acid present in the chain | Nature of amino acids in the chain |
| The advantage of Merrifield solid phase peptide synthesis is/are\_\_\_\_\_\_\_\_\_\_\_\_. | moderate yield of peptide is formed | Mixture of peptides can be prepared | Isomeric peptides can be prepared | Easy purification and high yield |
| The acid catalysed transformation of an aromatic ketoxime to N-substituted amide is known as ……………… rearrangement | Favorskii | Beckmann | Michael | Wittig |
| The reaction of …………… with acid is called Beckmann rearrangement | amide | ketoester | α-halo ketone | ketoxime |
| The final product obtained in a Favorskii rearrangement is a rearranged……………….. | derivatives of carboxylic acid | ketone | alkene | alcohol |
| Epimers are compounds that differ in configuration  at …………………… | Any one asymmetric carbon | β-carbon | γ-carbon | σ-carbon |
| ……………… method is used to descent the series of aldehyde in carbohydrates | Kiliani’s | Weerman’s | Ruff’s | Wohl’s |
| Cane sugar on hydrolysis yield…………….. | glucose & maltose | glucose & fructose | glucose & lactose | Only glucose |
| In the………….., glycosidic linkage lies to the right of the anomeric carbon atom | α form | β form | γ form | σ form |
| Periodic oxidation of sugars is also called as…………….. oxidation | Swern | Jones | Malaprade | Darzen |
| …………….. is an example of reducing sugar | Lactose | Sucrose | Glucose | Fructose |
| α-D-fructofuranose and α-D-fructopyranose are………. | constitutional isomers | diastereoisomers | anomers | enantiomers |
| …………… is the most stable form of glucose. | α-D-glucopyranose | β-D-glucopyranose | α-D-glucofuranose | β-D-glucofuranose |
| The methyl fructosides on refluxing with………………. give corresponding pentamethyl fructoses | Dimethyl sulphate in NaOH | Dimethyl sulphate in dry HCl | Methanol in dry HCl | Methyl Lithium in NaOH |
| …………………. is not a homopolysaccharide | Insulin | Chitin | Hyaluronic acid | glycogen |
| The number of optical isomers of glucose are | 4 | 8 | 16 | 32 |
| When a fundamental vibration couples with an overtone or combination band, the coupled vibration is called \_\_\_\_\_\_\_\_\_\_\_\_. | fermi resonance | scissoring | in-plane vibration | stretching |
| IR radiation has sufficient energy to cause atoms or group to \_\_\_\_\_\_\_\_ faster about the covalent bond connecting them. | Jump | relax | vibrate | rotate |
| 1H NMR spectroscopy gives information about the magnetically distinct \_\_\_\_\_\_\_\_ nuclei present in the molecule. | Carbon | oxygen | hydrogen | nitrogen |
| The chemical shift value of acetylenic proton is \_\_\_\_\_\_\_ ethylenic proton | less than | greater than | equal to | much greater than |
| The number of signals in 1H NMR spectroscopy tells \_\_\_\_\_\_\_\_\_\_\_present in the molecule. | how many different types of proton | about the electronic environment of each proton | how many protons are there in identical environment | about the environment of a proton with respect to other nearby proton |
| The nuclear magnetic resonance phenomenon occurs when there is \_\_\_\_\_\_\_\_ transition. | spin state | electronic level | vibrational level | rotational level |
| \_\_\_\_\_\_\_\_\_ nuclei is not NMR active. | 1H1 | 2H1 | 13C6 | 16O8 |
| On complete hydrolysis, nucleic acids give ---------------. | Mixture of nucleotides | Mixture of nucleosides | Sugars, Bases, and phosphate residues | Bases and sugars |
| Which one of the following nucleotide pair bonds would be found in a DNA molecule? | adenine-guanine | guanine-cytosine | adenine-cytosine | cytosine-uracil |
| The chain that forms the backbone of a nucleic acid molecule is ---. | Polyamide | Polyester | Polyethylene | Polystyrene |
| Which component is found in both guanosine and uridine? | Both contain an aldohexose. | Both contain three hydroxyl groups. | Both contain a purine ring | Both contain a pyranose. |
| The key to the ability of DNA to store genetic information and to pass it on from generation to generation is due to | Its double stranded structure | deoxyribose sugar | phosphodiester backbone | nitrogen bases |
| Which of these statements are TRUE for a glycosidic bond? | The bond between sugar and the nitrogenous base | The bond between the two sugar residues | The bond between the two sugar residues | The bond between base and phosphate |
| Catalytic hydrogenation is an example of ……. | Homogeneous catalysts | oxidation | heterogeneous catalysis | rearrangement |
| Nitriles can be reduced to primary amines using……. | Raney -Ni | Br2/ CCl4 | Pd-BaSO4 | SeO2 |
| Sodium bis(2-methoxy epoxy) aluminium hydride is also known as….. | Red-Al | epoxides | hydrates | alumina |
| Chemical species which improve the catalytic activity are called as………. | catalyst | promoters | poisons | precatalyst |
| NaBH4 and LiAlH4 do not reduce……………functional groups. | Polar | nonpolar | both | any |
| ………..is widely used as reducing agents for carbohydrates. | CAN | SeO2 | KMnO4 | NaBH4 |
| Reduction of olefinic double bonds using PtO2 gives mainly……… | *Cis*-isomer | *trans-*isomer | both | none |
| Oxidation of alkene to epoxides can be achieved by using….. | m-CPBA | CAN | NaBH4 | Pd/C |
|  | Ph-CH2CH2-CHOHPh | Ph-CH=CH-CH2Ph | Ph-CH=CH-CHO | Ph-CH2CH2-COPh |
| A polymer made up of a more than type of monomer is called as ……. | plastics | heteropolymers | Fibers | thermosets |