



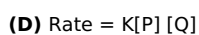
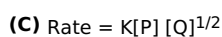
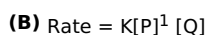
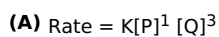
Wings

Organic Chemistry_Revision_Set II

DATE: 08-01-2022

TIME: 200mins

1 Choose the correct relation that can be possible for an elementary reaction :



2 Maltose is changed into monosaccharide (Glucose), in presence of :-

(A) Maltase

(B) Zymase

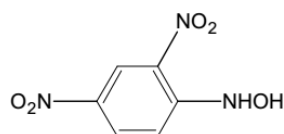
(C) Diastase

(D) Sucrase

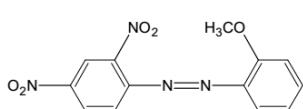
3 2, 4 – dinitroaniline $\xrightarrow[\text{ii) Anisole}]{\text{i) NaNO}_2 / \text{HCl}, 0^\circ \text{C}}$ Z

What is compound Z?

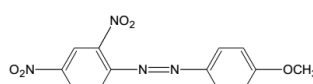
(A)



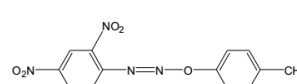
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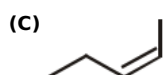
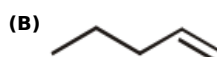
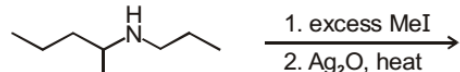
(C)



(D)

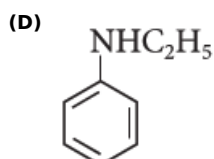
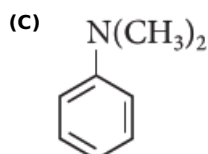
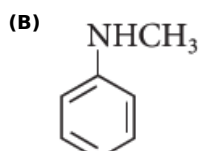
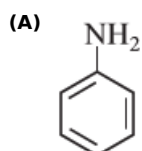


4 Which is not a possible product of the following reaction?



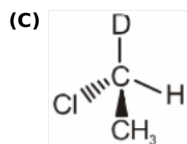
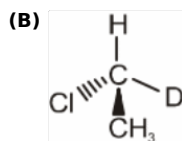
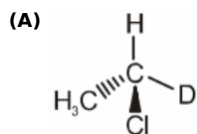
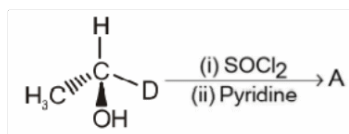
(D) All the above products are possible

5 Which of the following amines will give the carbylamine test?



6

Identify the correct product :



(D) None of the above

7

Which of the following is a crystalline solid?

(A) Glass

(B) Rubber

(C) Plastic

(D) Sugar

8

Hybridisation of B and N in inorganic benzene respectively are :

(A) sp, sp^3 (B) sp^3, sp^3 (C) sp^2, sp^2 (D) sp, sp

9

Which of the following reaction is not used for preparation of 1° amines?

(A) Reduction of oxime

(B) Reduction of amide

(C) Gabriel phthalimide reaction

(D) Reduction of isocyanides

10

Which of the following reagent is used to determine the presence of carbonyl group in glucose?

(I) Hydrogen cyanide

(II) Hydroxylamine

(III) Hydrogen iodide

(A) Only (I)

(B) Only (II)

(C) Both (I) and (III)

(D) Both (I) and (II)

11

Which of the following reactions is appropriate for converting acetamide to methanamine?

(A) Hoffmann hypobromamide reaction

(B) Stephen's reaction

(C) Gabriel phthalimide synthesis

(D) Carbylamine reaction

12

Nitration of aniline in strong acidic medium also gives m-nitroaniline because

(A) in spite of substituents nitro group always goes to only m-position

(B) in electrophilic substitution reactions amino group is meta directive

(C) in absence of substituents nitro group always goes to m-position

(D) in acidic (strong) medium aniline is present as anilinium ion

13

Name the process used for preparation of HNO_3

(A) Deacon's process

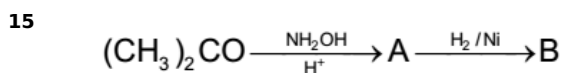
(B) Haber's process

(C) Ostwald's process

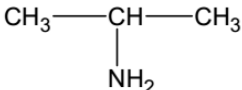
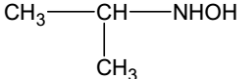
(D) Contact process

14 The solvent that favours S_N2 mechanism :

- (A) Water (B) Alcohol
(C) Acid (D) DMF



The compound B is

- (A)  (B) $CH_3 - NH - CH_3$ (C)  (D) $CH_3 - CH_2CH_2NH_2$

16 Which compound will liberate CO_2 from aqueous solution of $NaHCO_3$?

- (A) CH_3OH (B) CH_3NH_2 (C) $(CH_3)_4N^+ OH^-$ (D) $CH_3NH_3^+ Cl^-$

17 Which of the following is an amorphous solid?

- (A) Tar (B) Graphite
(C) Blue vitriol (D) Copper

18 Which of the following reagents will be able to distinguish between 1-butyne and 2-butyne?

- (A) $NaNH_2$ (B) HCl
(C) O_2 (D) Br_2

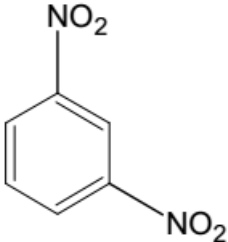
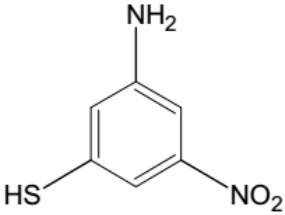
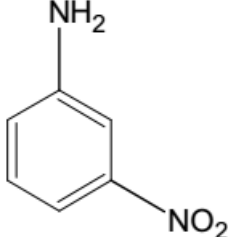
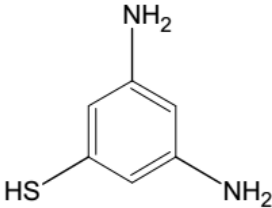
19 Which one of the following statements regarding photochemical smog is not correct?

- (A) Carbon monoxide does not play any role in photochemical smog formation. (B) Photochemical smog is an oxidizing agent in character.
(C) Photochemical smog is formed through photochemical reaction involving solar energy. (D) Photochemical smog does not cause irritation in eyes and throat.

20 In aqueous phase, most basic among the following is ____.

- (A) ammonia (B) trimethylamine
(C) methylamine (D) dimethylamine

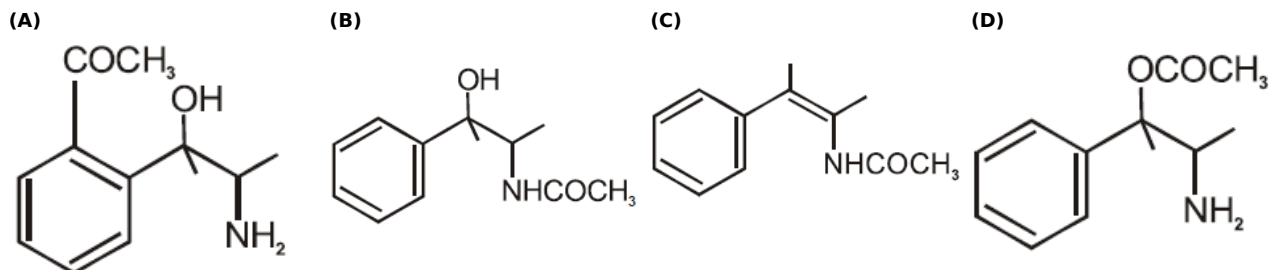
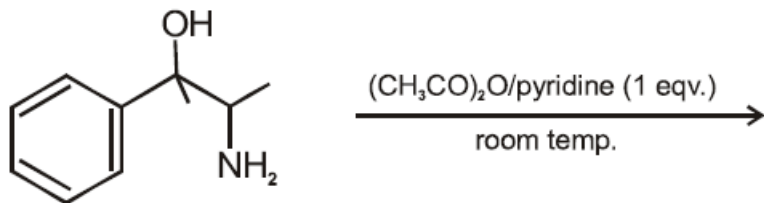
21 The major product (70% to 80%) of the reaction between *m*-dinitrobenzene with NH_4HS is

- (A)  (B)  (C)  (D) 

22 Which of the following is biodegradable polymer :-

- (A) PHBV (B) Nylon-2-Nylon-6
(C) Starch (D) All of these

23 The major product obtained in the following reaction is :



24 Which is correct about real gas :

- (A) Pressure of real gas is higher than ideal gas
- (B) Volume occupied by molecules real gas is lower than ideal gas
- (C) Real gas follows ideal gas equation at very low pressure and high temperature.
- (D) Real gas behaves as ideal gas at high pressure and low temperature.

25 Aniline cannot be prepared by

- (A) Reduction of nitrobenzene
- (B) Reaction of benzamide with Br_2 in the presence of KOH
- (C) Both (1) & (2)
- (D) Mendius method

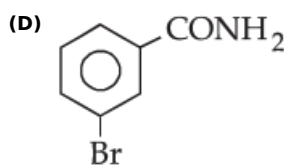
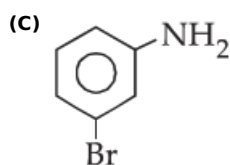
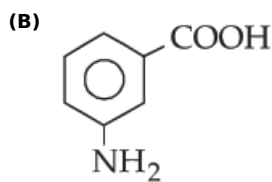
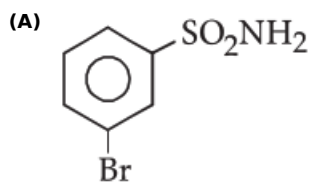
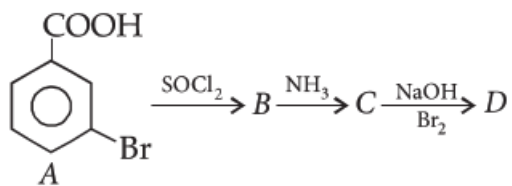
26 Glucose is an example of

- (A) aldohexose
- (B) ketohexose
- (C) aldopentose
- (D) ketopentose

27 Aniline $\xrightarrow{\text{Br}_2/\text{aq}}$ X $\xrightarrow{\text{NaNO}_2/\text{HCl}}$ Y $\xrightarrow[\text{(2) heat}]{\text{(1) HBF}_4}$ Z In this sequence, Z is

- (A) p-bromofluoro benzene
- (B) p-bromoaniline
- (C) 1, 3, 5-tribromo benzene
- (D) 2, 4, 6-tribromo-1-fluoro benzene

In a set of reactions *m*-bromobenzoic acid gave a product *D*. Identify the product *D*.



29

When ZnS and PbS minerals are present together, then NaCN is added to separate them in the froth floatation process as a depressant, because

(A)

(B)

(C)

(D)

ZnS forms soluble complex $\text{Na}_2[\text{Zn}(\text{CN})_4]$ Pb(CN)₂ is precipitated while no effect on ZnS ore they cannot be separated by adding NaCN PbS forms soluble complex $\text{Na}_2[\text{Pb}(\text{CN})_4]$

30

The compressibility factor for an ideal gas is :

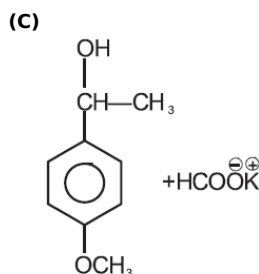
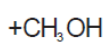
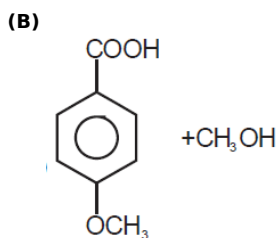
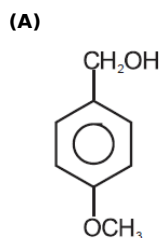
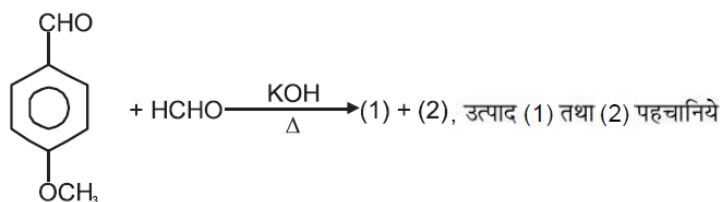
(A) 0

(B) 1

(C) 2

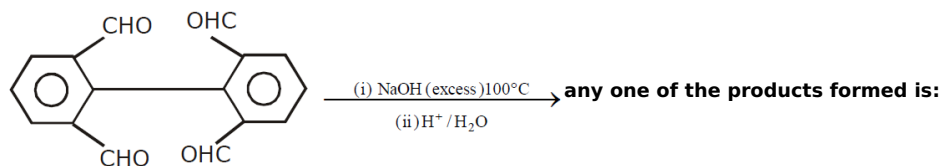
(D) 4

31

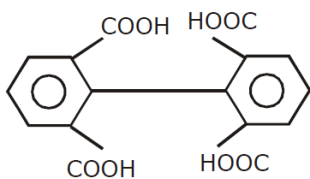


(D) (1) तथा (2) दोनों

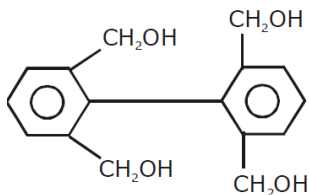
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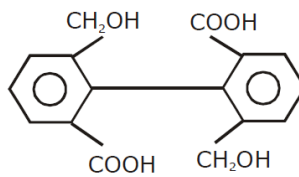
(A)



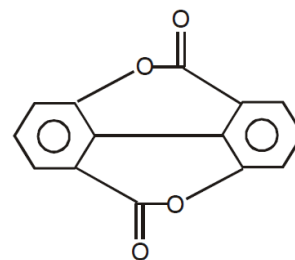
(B)



(C)

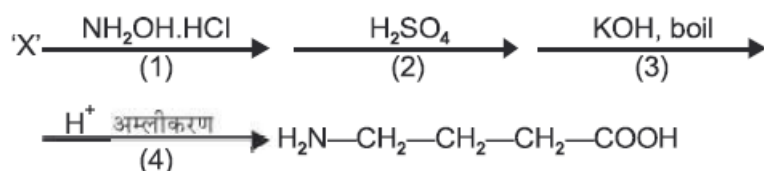


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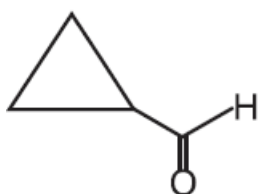
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निम्नलिखित अभिक्रिया पर विचार कीजिये

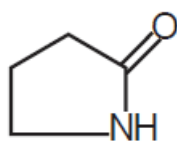


'X' हो सकता है

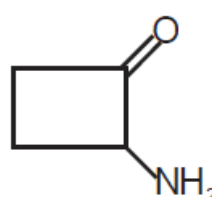
(A)



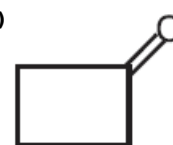
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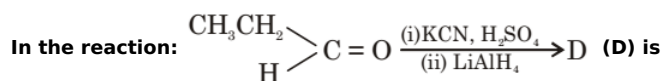
(C)



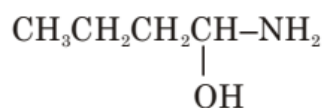
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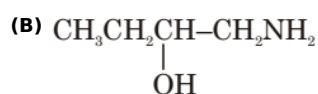
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(A)



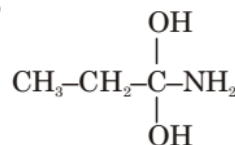
(B)



(C)



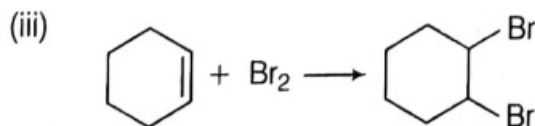
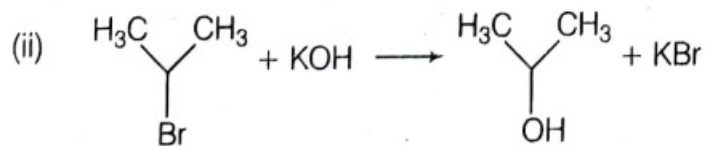
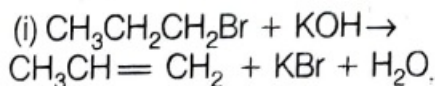
(D)



35 The order of reactivity of alkyl halide in the reaction $\text{R-X} + \text{Mg} \rightarrow \text{RMgX}$ is

(A) $\text{RI} > \text{RBr} > \text{RCl}$ (B) $\text{RI} > \text{RBr} > \text{RCl}$ (C) $\text{RBr} > \text{RCl} > \text{RI}$ (D) $\text{RBr} > \text{RI} > \text{RCl}$

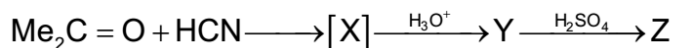
For the following reactions,



Which of the following statements is correct?

- (A) (i) is elimination reaction, (ii) is substitution and (iii) is addition reaction
 (B) (i) is elimination, (ii) and (iii) are substitution reactions
 (C) (i) is substitution, (ii) and (iii) are addition reactions
 (D) (i) and (ii) are elimination reactions and (iii) is addition reaction

37 Identify the final product Z in the following sequence of reaction:



- (A) $(\text{CH}_3)_2\text{C}(\text{OH})\text{COOH}$
 (B) $\text{CH}_2=\text{C}(\text{CH}_3)\text{COOH}$
 (C) $\text{HO}-\text{CH}_2\text{CH}(\text{CH}_3)\text{COOH}$
 (D) $\text{CH}_3\text{CH}=\text{CHCOOH}$

38 Which of the following functional derivative of carboxylic acid is least soluble in water?

- (A) acyl chloride
 (B) ester
 (C) amide
 (D) anhydride

39

The correct match between item 'I' and item 'II' is

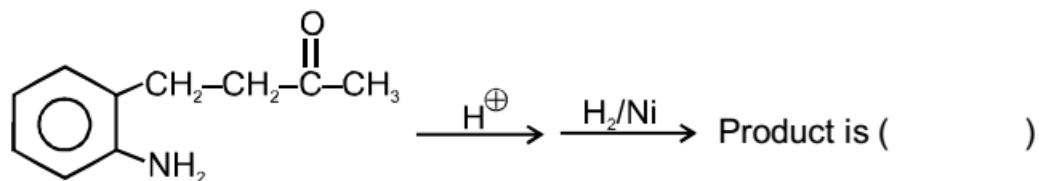
Item 'I' (Compound)	Item 'II' (Reagent)
(A) Lysine	(P) 1-naphthol
(B) Furfural	(Q) Ninhydrin
(C) Benzyl alcohol	(R) KMnO_4
(D) Styrene	(S) Ceric ammonium nitrate

- (A) A → Q, B → R, C → S, D → P
 (B) A → Q, B → P, C → S, D → R
 (C) A → Q, B → P, C → R, D → S
 (D) A → R, B → P, C → Q, D → S

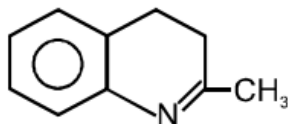
40 Oxalic acid when reduced with zinc and dil. H_2SO_4 gives

- (A) Zinc oxalate
 (B) Glycolic acid
 (C) Glycerol
 (D) Glycol

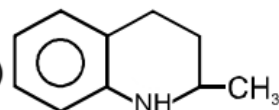
- 41 A dihalo alkane on hydrolysis produces a ketone with formula C_3H_6O . The dihalo alkane is
 (A) 2, 2 - dichloropropane (B) 1, 1 - dichloropropane (C) 1, 2 - dichloropropane (D) 1, 3 - dichloropropane
- 42 The convert a keto group into methylene group, the following reagent can be used :
 (A) Na-Hg + Water (B) Zn-Hg + Conc. HCl
 (C) Zn + CH_3COOH (D) Sn + Conc. HCl
- 43 Under Wolf-Kishner reduction conditions, the conversion which may be brought about is
 (A) benzaldehyde into benzyl alcohol (B) cyclohexanol into cyclohexanone (C) cyclohexanone into cyclohexanol (D) benzophenone into diphenylmethane
- 44 Identify Z in the series
 $CH_2 = CH_2 \xrightarrow{HBr} X \xrightarrow{\text{hydrolysis}} Y \xrightarrow[\text{I}_2 \text{ excess}]{Na_2CO_3} Z$
 (A) C_2H_5I (B) C_2H_5OH (C) CHI_3 (D) CH_3CHO
- 45 Heavy water is a compound of -
 (A) Hydrogen and heavier isotope of oxygen (B) Heavier isotope of hydrogen and heavier isotope of oxygen
 (C) Oxygen and heavier isotope of hydrogen (D) None of the above
- 46 The oxidation number of carbon in CH_2O is -
 (A) + 4 (B) + 2
 (C) 0 (D) -4
- 47 Reactant A $\xrightarrow[H_2SO_4]{K_2Cr_2O_7}$ B $\xrightarrow{PCl_5}$ C
 $\xrightarrow[H_2]{Pd, BaSO_4}$ CH_3CHO what is A ?
 (A) CH_3CH_2OH (B) CH_3OCH_3
 (C) CH_3CHO (D) CH_3COCH_3
- 48 Which of the following compounds does not reacts with $NaHSO_3$?
 (A) HCHO (B) $C_6H_5COCH_3$
 (C) CH_3COCH_3 (D) CH_3CHO



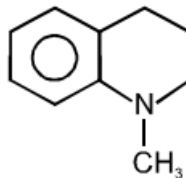
(A)



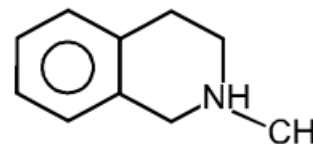
(B)



(C)



(D)



50 The correct statement regarding a carbonyl compound with a hydrogen atom on its alpha-carbon, is

(A)

a carbonyl compound with a hydrogen atom on its alpha-carbon rapidly equilibrates with its corresponding enol and this process is known as carbonylation

(B)

a carbonyl compound with a hydrogen atom on its alpha-carbon rapidly equilibrates with its corresponding enol and this process is known as keto-enol tautomerism

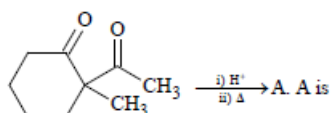
(C)

a carbonyl compound with a hydrogen atom on its alpha-carbon never equilibrates with its corresponding enol

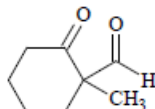
(D)

a carbonyl compound with a hydrogen atom on its alpha-carbon rapidly equilibrates with its corresponding enol and this process is known as aldehyde-ketone equilibration.

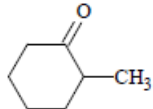
51



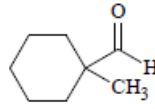
(A)



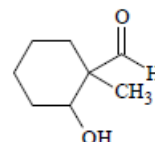
(B)



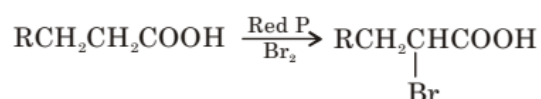
(C)



(D)



52 The reaction



is called

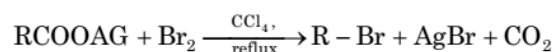
(A) Reimer Tiemann reaction

(B) Hell Volhard Zelinisky reaction

(C) Cannizzaro's reaction

(D) Sandmeyer's reaction

53 The reaction



is called

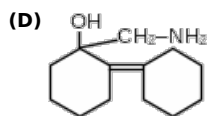
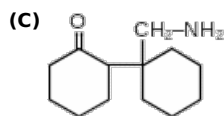
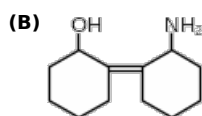
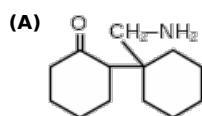
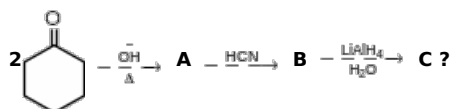
(A) Hunsdiecker reaction

(B) Kolbe's reaction

(C) Friedel Craft's reaction

(D) Wurtz reaction

54



55

Producer gas is a mixture of -

(A) CO and N₂

(B) CO₂ and H₂

(C) CO and H₂

(D) CO₂ and N₂

56

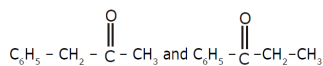
Schiff's reagent is used for the differentiation between:

(A) HCHO and CH₃CHO

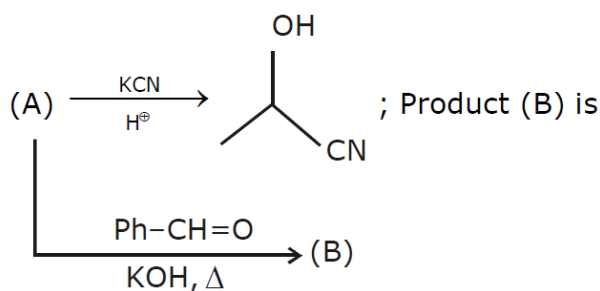
(B) CH₃COCH₃ and CH₃CHO

(C)

(D) HCHO and C₆H₅CHO



57



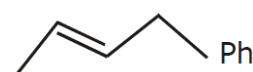
(A) Ph - CH = CH - Ph

(B) Ph - CH = CH - CH = O

(C)



(D)



58

The correct order of increasing C-O bond length of CO, CO₃⁻² and CO₂ is -

(A) CO₃⁻² < CO₂ < CO

(B) CO₂ < CO₃⁻² < CO

(C) CO < CO₃⁻² < CO₂

(D) CO < CO₂ < CO₃⁻²

59

An organic compound 'A' has the molecular formula C₃H₆O. It undergoes iodoform test. When saturated with HCl it gives 'B' of molecular formula C₉H₁₄O, 'A' & 'B' respectively are

(A) propanal & mesitylene

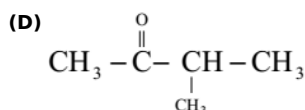
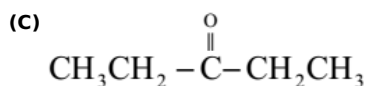
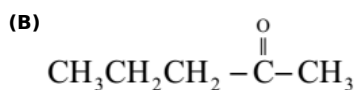
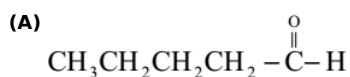
(B) propanone & mesityl oxide

(C) propanone & 2, 6 - dimethyl - 2, 5 - heptadien - 4 - one

(D) propane & mesitylene oxide

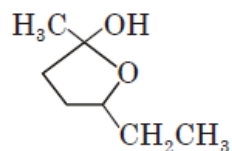
60

Which of the following is the most reactive isomer?



61

The compound shown below is the cyclic hemiacetal of



(A) 5-hydroxyheptanal

(B) 6-hydroxy-3-heptanone

(C) 5-hydroxy-2-heptanone

(D) 6-hydroxyl heptanal

62 Which will give a yellow precipitate with iodine & alkali?

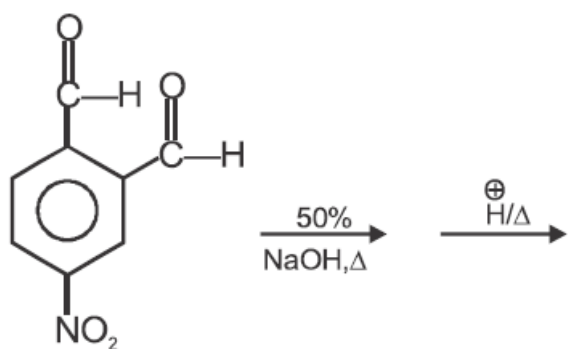
(A) 2-hydroxyl propan

(B) benzophenone

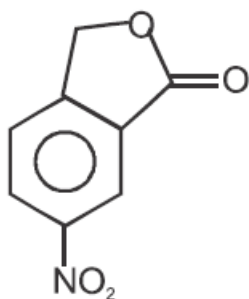
(C) o-methyl toluene

(D) acetamide

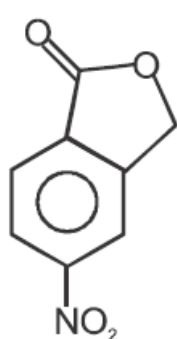
63



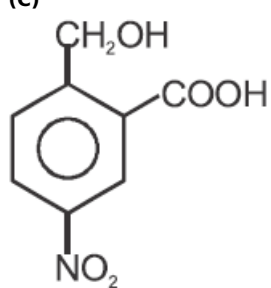
(A)



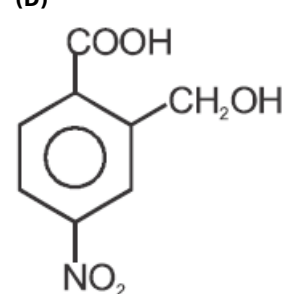
(B)



(C)

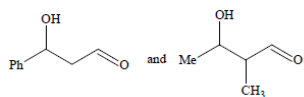


(D)

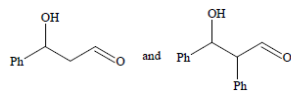


64 The product obtained by reaction of PhCHO & MeCHO are

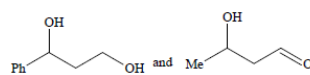
(A)



(B)

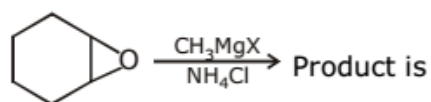


(C)



(D) None of these

65



(A) Enantiomer

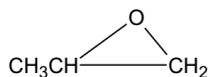
(B) Diastereoisomer

(C) Meso

(D) Achiral

66 The most probable structural formula for the compound whose empirical formula is C_3H_6O & which can react with Benedict reagent is

(A)



(B) CH_3CH_2CHO

(C) $CH_3OCH = CH_2$

(D) $CH_2 = CHCH_2OH$

67 The no. of S-O-S bonds in S_3O_9 & no. of P-O-P bond in $H_3P_3O_9$ respectively :-

(A) 2, 3

(B) 4, 3

(C) 6, 12

(D) 3, 3

68 Among the following which one is most basic-

(A) NH_3

(B) CH_3NH_2

(C) $CH_3CH_2NH_2$

(D) $\begin{array}{c} CH_2 - NH_2 \\ | \\ Cl \end{array}$

69. The alkyl halide that can be made by free radical halogenation of alkanes are:
(a) RCl and RBr but not RF and RI (b) RF , RCl and RBr but not RI
(c) RF , RCl , RBr and RI (d) RF , RBr and RI but not RCl

(A) 1

(B) 2

(C) 3

(D) 4

70 Which one of the following compounds shows the presence of intramolecular hydrogen bond?

(A) H_2O_2

(B) HCN

(C) Cellulose

(D) Concentrated acetic acid

71 Which of the following oxide is amphoteric in nature?

(A) SnO_2

(B) SiO_2

(C) GeO_2

(D) CO_2

72 Which one of the following is least reactive in a nucleophilic substitution reaction?

(A) CH_3-CH_2Cl

(B) $CH_2=CH-CH_2Cl$

(C) $(CH_3)_3C-Cl$

(D) $CH_2=CHCl$

73 In calcium fluoride, having the fluorite structure, the coordination numbers for calcium ion (Ca^{2+}) and fluoride ion (F^-) are

(A) 8 and 4

(B) 4 and 8

(C) 4 and 2

(D) 6 and 6

74 Chloropicrin is formed when HNO_3 reacts with

(A) CCl_4

(B) $CHCl_3$

(C) CH_3Cl

(D) CH_2Cl_2

75 Identify the incorrect reaction product :-

(A) $Au + \text{Aqua Regia} \rightarrow H[AuCl_4] + NO + H_2O$

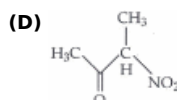
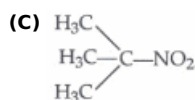
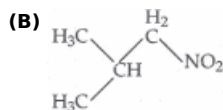
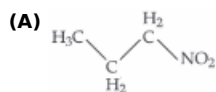
(B) $Cu + \text{Conc } HNO_3 \rightarrow Cu(NO_3)_2 + NO_2 + H_2O$

(C) $Zn + \text{Very dilute } HNO_3 \rightarrow Zn(NO_3)_2 + N_2O$

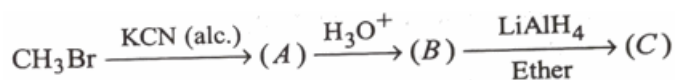
(D) $BF_3 + NaH \rightarrow B_2H_6 + NaF$

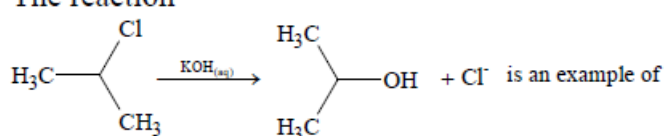
- 76 In which of the following orders the ionic radii is correctly represented?
 (A) $H^- > H^+ > H$ (B) $Na^+ > F^- > O^{2-}$
 (C) $F^- > O^{2-} > Na^+$ (D) None of these
- 77 The typical reaction of carbonyl group is suppressed the most in
 (A) $CH_3 - CHO$ (B) CH_3CONH_2 (C) CH_3COCH_3 (D) CH_3COOCH_3

- 78 Which of the following nitro compounds does not react with nitrous acid?

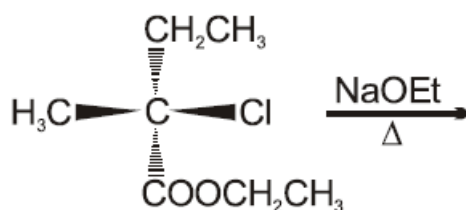


- 79 The end production of the following sequence is :

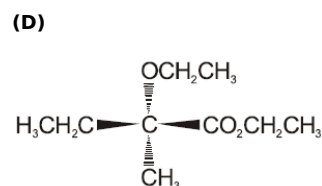
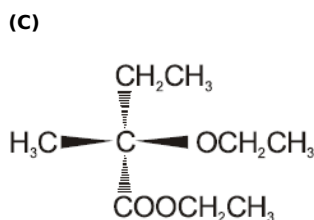
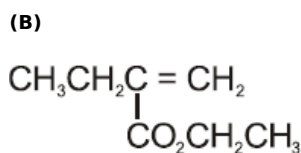
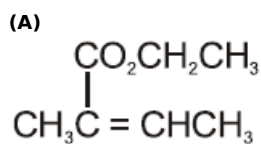


- (A) CH_3CHO (B) CH_3CH_2OH
 (C) CH_3COCH_3 (D) CH_4
- 80 The reaction
 is an example of
 (A) Reduction (B) Oxidation (C) Neutralisation (D) Nucleophilic substitution

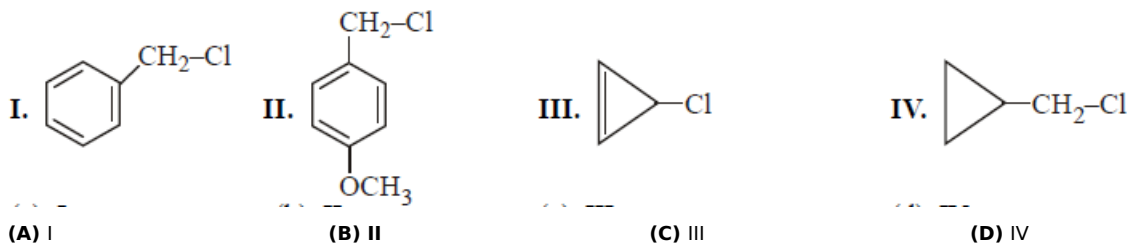
81



- The major product of the following reaction is :



82 Which of the following gives white ppt with ammonical silver nitrate most readily.



83 To differentiate between pentan-2-one and pentan-3-one a test is carried out. Which of the following is the correct answer?

- (A) Pentan-2-one will give silver mirror test. (B) Pentan-2-One will give iodoform test.
 (C) Pentan-3-One will give iodoform test. (D) None of these.

84 67. Which one of the following is employed as a Tranquillizer drug?

- (a) Promethazine (b) Valium (c) Naproxen (d) Mifepristone.

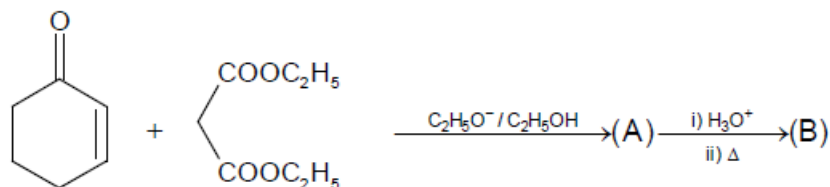
- (A) 1 (B) 2
 (C) 3 (D) 4

85

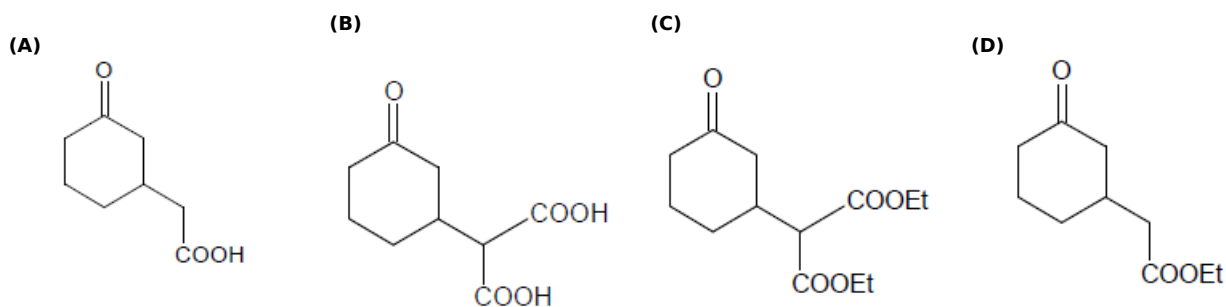
If $a_1, a_2, a_3, \dots, a_{2n+1}$ are in A.P., then $\frac{a_{2n+1} - a_1}{a_{2n+1} + a_1} + \frac{a_{2n} - a_2}{a_{2n} + a_2} + \dots + \frac{a_{n+2} - a_n}{a_{n+2} + a_n}$ is equal to

- (A) $\frac{n(n+1)}{2} \times \frac{a_2 - a_1}{a_{n+1}}$ (B) $\frac{n(n+1)}{2}$
 (C) $(n+1)(a_2 - a_1)$ (D) None of these

86



The compound B is




87

Calgon used as a water softener, is :

- (A) $\text{Na}_2[\text{Na}_4(\text{PO}_3)_6]$ (B) $\text{Na}_4[\text{Na}_2(\text{PO}_3)_6]$
 (C) $\text{Na}_4[\text{Na}_4(\text{PO}_4)_5]$ (D) $\text{Na}_4[\text{Na}_2(\text{PO}_4)_6]$

- 88 In the reaction, $\text{CCl}_3\text{CHO} + \text{NaOH} \rightarrow \text{X} + \text{Y}$. Then X and Y are
- (A) $\text{CH}_2\text{Cl}_2, \text{HCOONa}$ (B) $\text{CHCl}_3, \text{HCOONa}$
- (C) $\text{CH}_2\text{Cl}_2, \text{CO}_2$ (D) $\text{CHCl}_3, \text{HCOOH}$

- 89  in IUPAC called :-

- (A) Cyano methanal (B) 2-Oxo ethane nitrile
- (C) Cyano ethanal (D) Formonitrile

- 90 Molecular formula $\text{C}_4\text{H}_8\text{O}_2$ represents :-
- (A) An acid only (B) An ester only
- (C) An alcohol only (D) An acid and an ester also

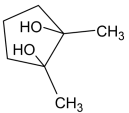
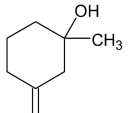
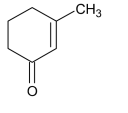
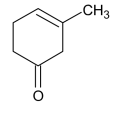
- 91 **STATEMENT - 1**
When butan-2-ol is treated with SOCl_2 in presence of pyridine, inversion takes place.
STATEMENT - 2
Pyridine is a weak base.

- (A) Statement - 1 is True, Statement - 2 is True; Statement - 2 is a correct explanation for Statement - 1. (B) Statement - 1 is True, Statement - 2 is True; Statement - 2 is NOT a correct explanation for Statement - 1. (C) Statement - 1 is True, Statement - 2 is False. (D) Statement - 1 is False, Statement - 2 is True.

- 92 In which of the following reactions, aldehydes & ketones are distinguished

- (A) reactions with phenyl hydrazine (B) reactions with hydroxylamine (C) reactions with semicarbazide (D) reactions with silver nitrate mixed with ammonia

- 93 Identify the final product (Z) in the following sequence of reactions. 

- (A)  (B)  (C)  (D) 

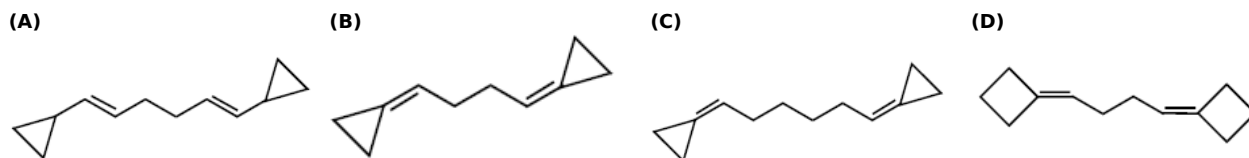
- 94 'Cis-1, 4-polyisoprene' is
- (A) Thermoplastic (B) Thermosetting plastic (C) Elastic (rubber) (D) Resin

- 95 Chlorex which is a good solvent for aromatic impurities is:
- (A) dichlorodimethyl ether (B) dichlorodiethyl ether
- (C) monochloro ether (D) diethyl ether

- 96 Colloids can be prepared by :
- (A) Ultrafiltration (B) Dialysis
- (C) Peptisation (D) Electrodialysis

- 97 The correct order regarding the electronegativity of hybrid orbitals of C is :
- (A) $sp < sp^2 < sp^3$ (B) $sp > sp^2 > sp^3$
- (C) $sp > sp^2 < sp^3$ (D) $sp < sp^2 > sp^3$

98 Identify the compound (Z), of molecular formula $C_{12}H_{18}$ which gives only two products of molecular formula C_4H_6O and $C_4H_6O_2$ on ozonolysis and both the products are oxidised to $C_4H_6O_2$ and $C_4H_6O_4$ with H_2O_2 . The product $C_4H_6O_4$ on heating gives anhydride.



99 Which of the following compounds would be hydrolysed most easily ?

- (A) C_2H_5Br (B) CH_3Br (C) $CH_2 = CH - Br$ (D) $CH_2 = CH - CH_2Br$.

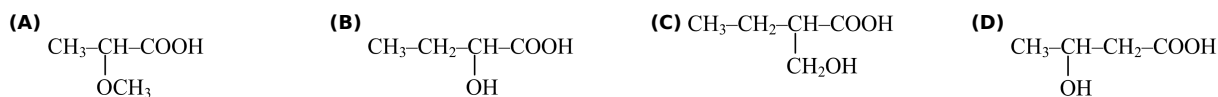
100 Which one of the following can be oxidised to the corresponding carbonyl compound?

- (A) 2-Hydroxypropane (B) ortho-Nitrophenol
(C) Phenol (D) 2-Methyl-2-hydroxypropane

101 Which one is the characteristic feature of a free radical :

- (A) presence of positive charge (B) presence of unpaired electron
(C) presence of even number of electrons (D) associated with high stability

102 Which optically active compound on reduction with $LiAlH_4$ will give optically inactive compound ?



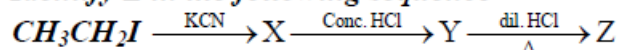
103 Two electrons occupying the same orbital are distinguished by:

- (A) azimuthal quantum number (B) spin quantum number
(C) principal quantum number (D) magnetic quantum number

104 Which of the following oxidation states is common for all lanthanoids?

- (A) +2 (B) +3
(C) +4 (D) +5

105 Identify Z in the following sequence



- (A) CH_3COOCl (B) CH_3CONH_2 (C) CH_3COOH (D) CH_3CH_2COOH .

106 Which one of the following organo halogen compounds when heated with alcoholic potassium hydroxide does not undergo dehydrohalogenation reaction?

- (A) sec-butyl chloride (B) neopentyl chloride
(C) iso-butyl chloride (D) isopropyl-chloride

107 How many π and σ bond are present in ethylene

- (A) 5 σ , 1 π (B) 3 σ , 3 π
(C) 2 σ , 4 π (D) 4 σ , 2 π

108 The ketone that does not form a cyanohydrin easily is

- (A) $C_6H_5COCH_3$ (B) CH_3COCH_3 (C) $C_6H_5COC_6H_5$ (D) $CH_3COC_6H_5$

- 109 In the reaction

$$\text{CH}_3 - \text{CH} = \text{CH} - \text{CHO} \xrightarrow[\text{agent}]{\text{oxidizing}} \text{CH}_3 - \text{CH} = \text{CH} - \text{COOH}$$
the oxidising agent can be
 (A) alkaline KMnO_4 (B) acidified $\text{K}_2\text{Cr}_2\text{O}_7$ (C) Benedict's solution (D) all of the above
- 110 Nylon 6,6 is a strong crystalline fibre due to the presence of intermolecular forces which are :
 (A) H-bond (B) covalent bonds (C) van der Waals' attractive forces (D) ionic bonds
- 111 Of the following which one is classified as polyester polymer?
 (A) Terylene (B) Bakelite (C) Melamine (D) Nylon-6,6
- 112 End product of the following reaction is :

$$\text{CH}_3\text{CH}_2\text{COOH} \xrightarrow[\text{red P}]{\text{Cl}_2} \xrightarrow{\text{alcoholic KOH}}$$

 (A) $\text{CH}_3\text{CH}(\text{OH})\text{COOH}$ (B) $\text{CH}_2\text{CH}_2\text{COOH}$ (C) $\text{CH}_2 = \text{CHCOOH}$ (D) $\text{CH}_2\text{CH}(\text{Cl})\text{COOH}$
- 113 Which of the following compounds is not an aliphatic acid ?
 (A) stearic acid (B) palmitic acid (C) oleic acid (D) p-nitro benzoic acid
- 114 The atomic number of cerium (Ce) is 58. The CORRECT electronic configuration of Ce^{3+} ion is _____.
 (A) $[\text{Xe}]4f^1$ (B) $[\text{Kr}]4f^1$ (C) $[\text{Xe}]4f^{13}$ (D) $[\text{Kr}]4d^1$
- 115 $\text{C}_6\text{H}_{11}\text{COOH} + \text{NaHC}^+\text{O}_3 \rightarrow \text{C}_6\text{H}_{11}\text{COONa} + \text{CO}_2\text{C}^*$ is with in the product -
 (A) CO_2 (B) $\text{C}_6\text{H}_{11}\text{COONa}$ (C) Both (D) None
- 116 $\text{C}_5\text{H}_{11}\text{Br}$ (A) when treated with alcoholic KOH gives alkene (B) while with aqueous KOH gives alcohol (C). (C) when heated with copper gives (B). The structure of (A) is
 (A) $\text{CH}_3 - \underset{\text{CH}_3}{\text{CH}} - \underset{\text{Br}}{\text{CH}} - \text{CH}_3$ (B) $\text{CH}_3 - \underset{\text{Br}}{\overset{\text{CH}_3}{\text{C}}} - \text{CH}_2 - \text{CH}_3$ (C) $\text{CH}_3 - \underset{\text{Br}}{\text{CH}} - \text{CH}_3$ (D) $\text{CH}_3 - \underset{\text{Br}}{\overset{\text{CH}_3}{\text{C}}} - \text{CH}_3$
- 117 Predict the relationship between major products (P) and (Q) ?

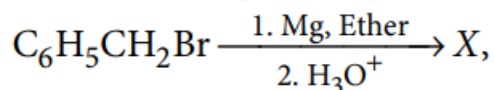
$$\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2\text{Br} \xrightarrow[\text{EtOH}]{\text{EtO}^\ominus} \text{(P)}$$

$$\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2\text{Br} \xrightarrow[\text{t-BuOH}]{\text{t-BuO}^\ominus} \text{(Q)}$$

 (A) Positional isomers (B) Functional isomers (C) Enantiomers (D) chain isomers

118

In the following reaction,



the product 'X' is

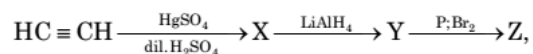
- (A) $\text{C}_6\text{H}_5\text{CH}_2\text{OCH}_2\text{C}_6\text{H}_5$ (B) $\text{C}_6\text{H}_5\text{CH}_2\text{OH}$
 (C) $\text{C}_6\text{H}_5\text{CH}_3$ (D) $\text{C}_6\text{H}_5\text{CH}_2\text{CH}_2\text{C}_6\text{H}_5$

119

Which of the following homologous series has incorrect general formula :-

- (A) Alkyne $\text{C}_n\text{H}_{2n-2}$ (B) Alkanol $\text{C}_n\text{H}_{2n+2}\text{O}$
 (C) Alkanal $\text{C}_n\text{H}_{2n+1}\text{O}$ (D) Carboxylic acid $\text{C}_n\text{H}_{2n}\text{O}_2$

120 In the reaction



Z is

- (A) Ethylidene bromide (B) Ethyl bromide
 (C) Bromobenzene (D) Ethylene bromide

121 Which one of the following is a bacteriostatic drug ?

- (A) aminoglycosides (B) penicillin-G
 (C) ofloxacin (D) ampicillin

122

Which substance is not greenish in colour?

- (A) FeSO_4 (B) Cr_2O_3
 (C) $[\text{Ni}(\text{H}_2\text{O})_6]^{2+}$ (D) $\text{Fe}(\text{OH})_3$

123

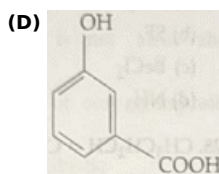
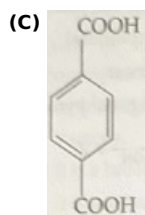
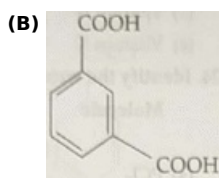
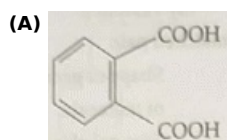
66. Presence of nitro group in a benzene ring:

- (a) renders the ring basic
 (b) deactivates the ring towards nucleophilic substitution
 (c) deactivates the ring towards electrophilic substitution
 (d) activates the ring towards electrophilic substitution

- (A) 1 (B) 2
 (C) 3 (D) 4

124

Which of the following acid will form an (a) Anhydride on heating and (b) Acid amide on strong heating with ammonia?



125 Formalin is a

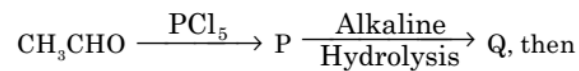
(A) 40% aqueous solution of formaldehyde

(B) 60% aqueous solution of formaldehyde

(C) 50% aqueous solution of formaldehyde

(D) 75% aqueous solution of formaldehyde

126



the compound Q is

(A) CH_3CHO (B) HCHO (C) CH_3COCH_3 (D) CH_3OCH_3

127

The compound A on treatment with Na gives B, and with PCl_5 gives C. B and C react together to give diethyl ether. A, B and C are in the order

(A) $\text{C}_2\text{H}_5\text{OH}, \text{C}_2\text{H}_5\text{Cl}, \text{C}_2\text{H}_5\text{ONa}$ (B) $\text{C}_2\text{H}_5\text{OH}, \text{C}_2\text{H}_5\text{Cl}, \text{C}_2\text{H}_5\text{ONa}$ (C) $\text{C}_2\text{H}_5\text{Cl}, \text{C}_2\text{H}_5\text{Cl}, \text{C}_2\text{H}_5\text{OH}$ (D) $\text{C}_2\text{H}_5\text{OH}, \text{C}_2\text{H}_5\text{ONa}, \text{C}_2\text{H}_5\text{Cl}$

128

Optically active compounds among the following are,

1. 1-phenyl ethanol
2. 2-phenyl propan-1-ol
3. 2-phenyl propan-2-ol
4. 2-methyl propan-2-ol

(A) 2 and 3

(B) 1 and 2

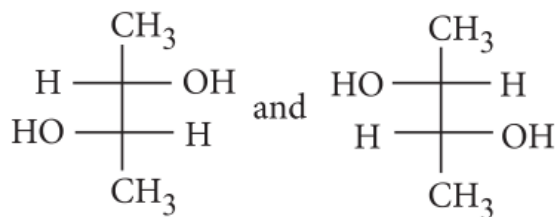
(C) 3 and 4

(D) 2 and 4

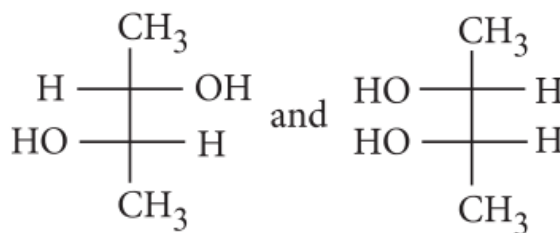
129

Which of the following pairs of compounds are enantiomers?

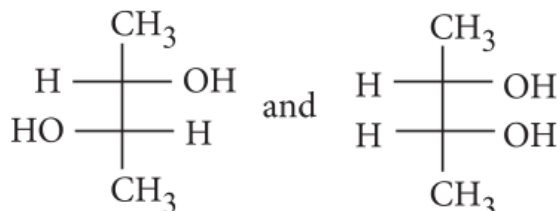
(A)



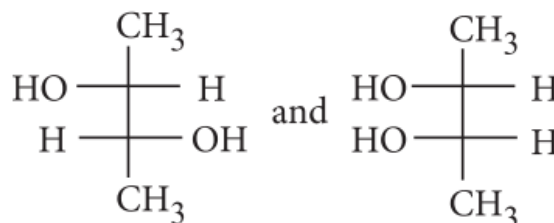
(B)



(C)



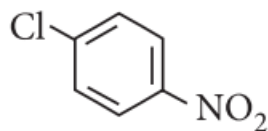
(D)



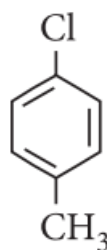
130

Which of the following compounds undergoes nucleophilic substitution reaction most easily?

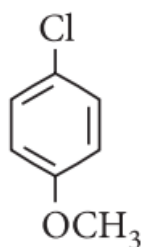
(A)



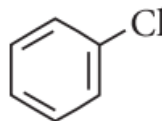
(B)



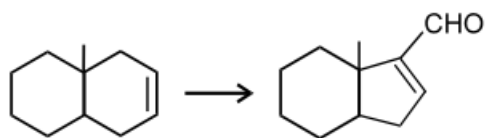
(C)



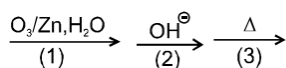
(D)



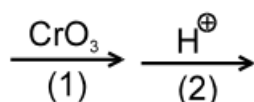
131



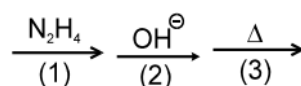
(A)



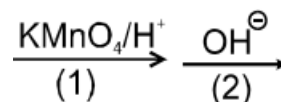
(B)



(C)



(D)



132

Plaster of paris is -

(A) $\text{CaSO}_4 \cdot \text{H}_2\text{O}$ (B) $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$ (C) $(\text{CaSO}_4)_2 \cdot \text{H}_2\text{O}$ (D) $\text{CaSO}_4 \cdot 3\text{H}_2\text{O}$

133

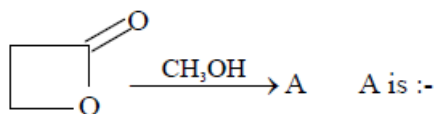
Aqueous solution of which of the following compounds is the best conductor of electric current?

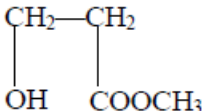
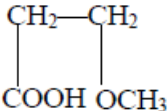
(A) Hydrochloric acid, HCl (B) Ammonia, NH_3 (C) Fructose, $\text{C}_6\text{H}_{12}\text{O}_6$ (D) Acetic acid, $\text{C}_2\text{H}_4\text{O}_2$

134 Which of the following statement is not correct for a nucleophile?

- (A) Nucleophile is a lewis acid (B) Ammonia is a nucleophile
 (C) Nucleophiles attack low electron density sites (D) Nucleophiles are not electron seeking

135



- (A)  (B)  (C) both are correct (D) None is correct

136 Benzoic acid gives benzene on being heated with X and phenol gives benzene on being heated with Y. Therefore X and Y respectively are

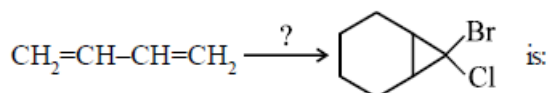
- (A) sodalime and copper (B) Zn dust and NaOH (C) Zn dust sodalime (D) sodalime and Zn dust

137 What is the principal product of the following reaction ?



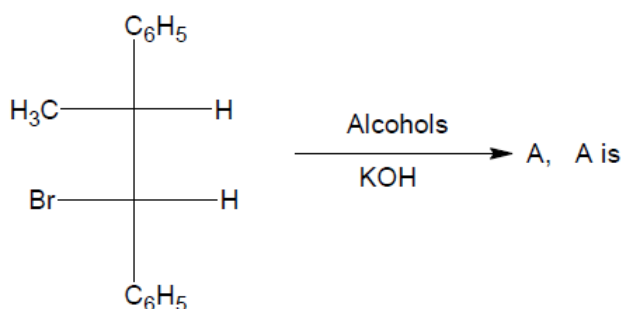
- (A)  (B) 
 (C)  (D) None of these

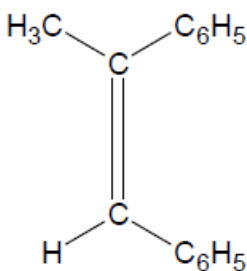
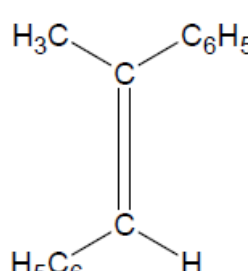
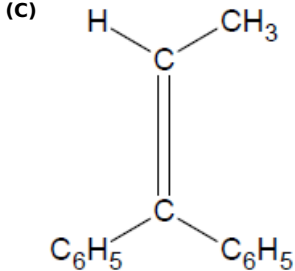
138 The correct sequence of reagents in the reaction



- (A) $\text{CH}_2=\text{CH}_2/\Delta, \text{CHCl}_3/\text{Alc. KOH}$ (B) $\text{CH}_2=\text{CH}-\text{CH}=\text{CH}_2/\Delta \& \text{CHBrCl}_2/\text{Alc. KOH}$ (C) $\text{CH}_2=\text{CH}_2/\Delta, \text{CHClBrI}/\text{Alc. KOH}$ (D) $\text{CH}_2=\text{CH}_2/\Delta, \& \text{CHFCIBr}/\text{Alc. KOH}$

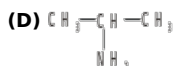
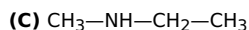
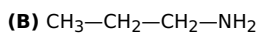
139



- (A)  (B)  (C)  (D) None is correct

140

The higher homologue of dimethylamine

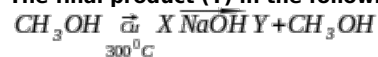
 $(\text{CH}_3\text{—NH—CH}_3)$ has the structure :-

141

Which of the following gas can be dried by conc. H_2SO_4 ?

142

The final product (Y) in the following sequence of chemical reactions is.



(A) An alkene

(B) A carboxylic acid

(C) An aldehyde

(D) Sodium salt of carboxylic acid.

143

Column I

- (A) Cellulose
 (B) Nylon-6, 6
 (C) Protein
 (D) Sucrose

Column II

- (p) Natural Polymer
 (q) Synthetic polymer
 (r) Amide polymer
 (s) Glycoside polymer

(A) (A - p,s); (B - q,r); (C - p,r); (D - r)

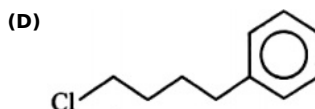
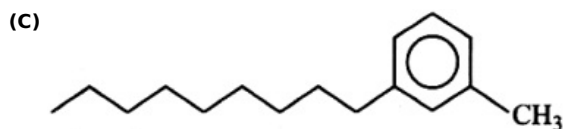
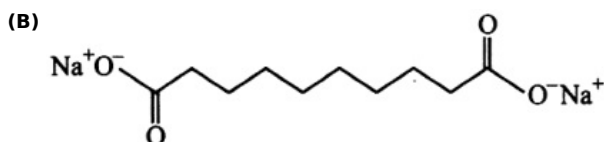
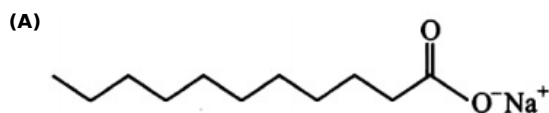
(B) (A - r,s); (B - q,r); (C - p,r); (D - s)

(C) (A - p,s); (B - q,r); (C - p,r); (D - s)

(D) (A - p,s); (B - s,r); (C - p,r); (D - s)

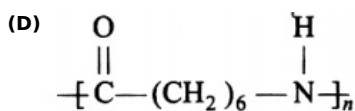
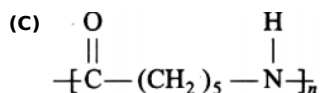
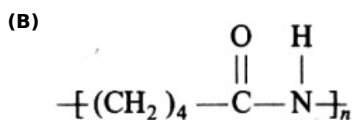
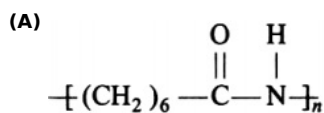
144

Which of the following molecules is most suitable to disperse benzene in water ?



145

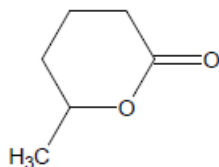
The structure of Nylon-6 is



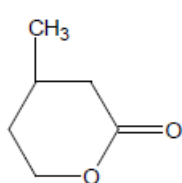
146

End product of the reaction $\text{H}_3\text{C}-\overset{\text{O}}{\parallel}{\text{C}}-\text{CH}_2-\text{CH}_2-\text{CH}_2-\overset{\text{O}}{\parallel}{\text{C}}-\text{OH} \xrightarrow[2. \text{H}_2\text{O}, \text{H}^+]{1. \text{NaBH}_4}$ is

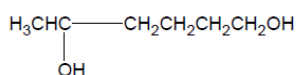
(A)



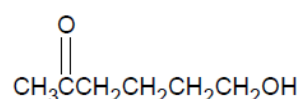
(B)



(C)



(D)



147

Statement - 1: Oxalic acid $\text{H}_2\text{C}_2\text{O}_4$, can be used to clean rust stains from sinks and bathtubs.

Statement - 2: Oxalic acid is a chelating ligand and form a stable complex with Fe^{2+} .

(A)

STATEMENT-1 is True,
STATEMENT-2 is True;
STATEMENT-2 is a correct
explanation for STATEMENT-1

(B)

STATEMENT-1 is True,
STATEMENT-2 is True;
STATEMENT-2 is NOT a correct
explanation for STATEMENT-1

(C)

STATEMENT-1 is True,
STATEMENT-2 is False

(D)

STATEMENT-1 is False,
STATEMENT-2 is True

148

What is the general molecular formula of the product obtained when lanthanoids (Ln) react with nitrogen?

(A) LnN

(B) LnN₂(C) Ln₃N₂(D) LnN₃

149

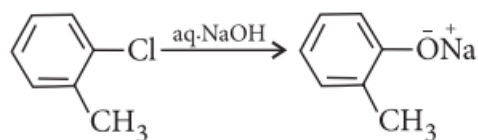
Which of the following compounds gives precipitate with I₂ and alkali

(A) CH₃OH(B) CH₃CH₂CH₂-OH(C) C₂H₅OC₂H₅(D) CH₃CH₂OH

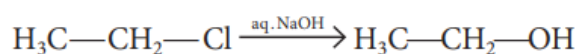
150

The hydrolysis reaction that takes place at the slowest rate, among the following is

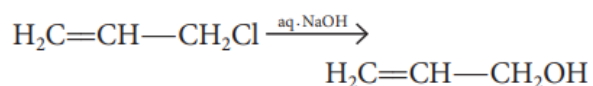
(A)



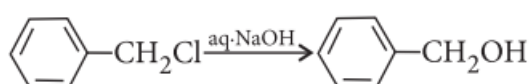
(B)



(C)

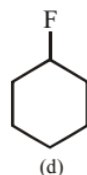
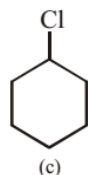
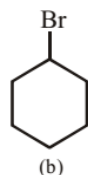
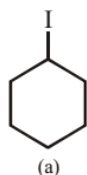


(D)



151

Compare rate of elimination bimolecular.



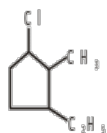
(A) a > b > c > d

(B) a > c > b > d

(C) b > a > c > d

(D) b > d > a > c

152



has the IUPAC name :-

- (A) 3-Chloro-1-ethyl-2-methyl cyclopentane
 (B) 1-Chloro-3-ethyl-2-methyl cyclopentane
 (C) 4-Chloro-1-ethyl-5-methyl cyclopentane
 (D) All are correct

153

In an S_N1 reaction on chiral centres, there is

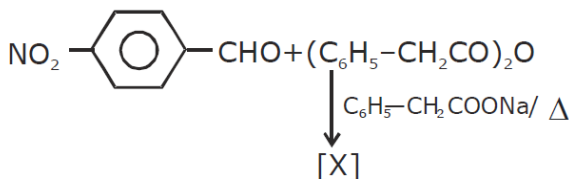
- (A) inversion more than retention leading to partial racemisation
 (B) 100% retention
 (C) 100% inversion
 (D) 100% racemisation.

154

 $a Zn + b NO_3^- + c H^+ \rightarrow d NH_4^+ + e H_2O + f Zn^{+2}$ a, b, c, d, e and f are -

- (A) a b c d e f
 2 4 6 8 4 2
 (B) a b c d e f
 1 4 10 3 1 4
 (C) a b c d e f
 4 1 10 1 3 4
 (D) a b c d e f
 10 4 1 3 4 2

155

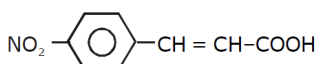


The product of the reaction:

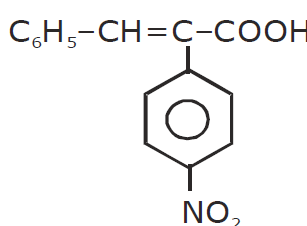
[X] will be:

- (A)
- $\text{C}_6\text{H}_5\text{-CH=CH-COOH}$

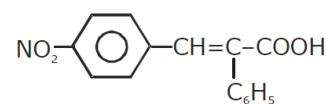
(B)



(C)



(D)



156 Which one is classified as a condensation polymer ?

- (A) acrylonitrile
 (B) dacron
 (C) neoprene
 (D) teflon

157

Decreasing order of stability of given carbocations is

- (1) (2) $\text{CH}_2=\text{CH}-\overset{\oplus}{\text{C}}\text{H}_2$ (3) $\text{C}_6\text{H}_5-\overset{\oplus}{\text{C}}\text{H}_2$ (4) $\text{CH}_3-\overset{\oplus}{\text{C}}\text{H}-\text{CH}_3$

- (A) $3 > 2 > 4 > 1$
 (B) $1 > 3 > 4 > 2$
 (C) $1 > 3 > 2 > 4$
 (D) $3 > 2 > 1 > 4$

158

Which one of the following statements is not true?

(A) Buna-S is a copolymer of butadiene and styrene.

(B) Natural rubber is a 1,4-polymer of isoprene.

(C)

In vulcanization, the formation of sulphur bridges between different chains make rubber harder and stronger.

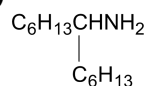
(D)

Natural rubber has the trans-configuration at every double bond.

159

Identify (C) in the following sequence $C_6H_{13}COCl \xrightarrow[S, \Delta]{H_2, Pd/BaSO_4} (A) \xrightarrow{C_6H_{13}NH_2} (B) \xrightarrow{H_2/Ni} (C)$ (A) $C_6H_{13}CH_2NHC_6H_{13}$ (B) $C_{12}H_{25}CH_2NH_2$

(C)

(D) $(C_6H_{13})_2CH_3N$

160

The value of Planck's constant is 6.63×10^{-34} Js. The speed of light is 3×10^{17} nms⁻¹. Which value is closest to the wavelength in nanometer of a quantum of light with frequency of 6×10^{15} s⁻¹?

(A) 10

(B) 25

(C) 50

(D) 75

161

The change in the oxidation of Cl when it reacts with dilute alkali is :

(A) 0 to -1, 0 to +5

(B) 0 to -1, 0 to +1

(C) 0 to -1, 0 to +3

(D) 0 to -1, Only

162

Which is incorrect IUPAC name :-

(A) 3-Pentyne

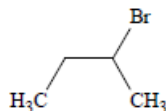
(B) 3-Methyl-2-butanone

(C) 2-Ethyl-3-methyl-1-butene

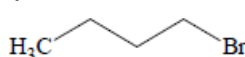
(D) 3-Ethyl-2-methyl pentane

163 n-butane reacts with Br₂ at 130° to give more amount of

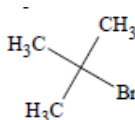
(A)



(B)



(C)



(D) all in equal amounts

164

2,4,6 trinitro chlorobenzene on warming with water produces

(A) Chlorobenzene

(B) Picric acid

(C) Phenol

(D) No compound C-Cl is stable

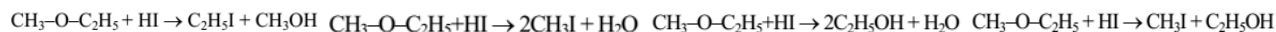
165 Which is correct reaction?

(A)

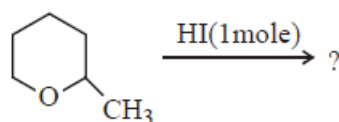
(B)

(C)

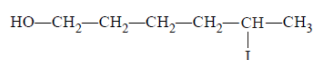
(D)



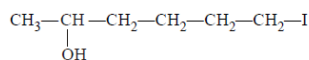
166



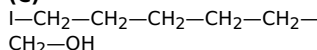
(A)



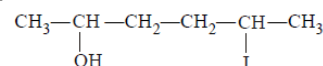
(B)



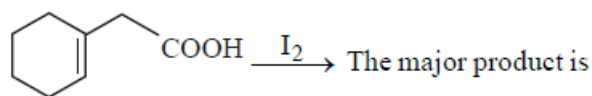
(C)

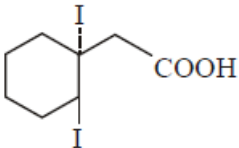
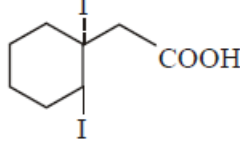
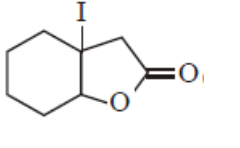
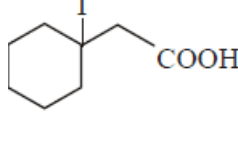


(D)



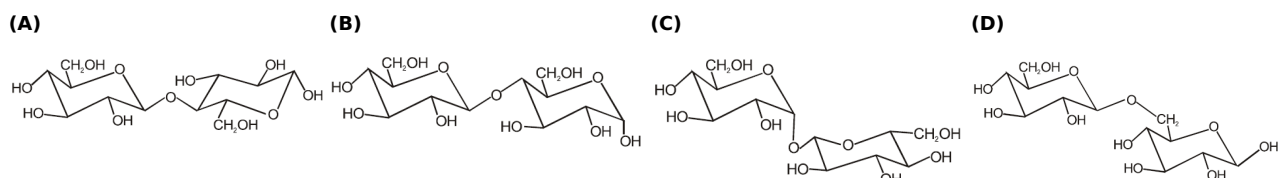
167



- (A)  (B)  (C)  (D) 

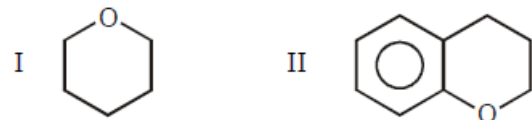
168

निम्न में से कौनसा डाइसेकेराइड एक अन-अपचायक शर्करा है (टॉलेन अभिकर्मक के साथ क्रिया नहीं करता है) ?



169

Which forms di-iodide on reaction with HI (excess)?



- (A) I and II both (B) II only (C) I only (D) none

170

For a first order reaction, when a graph is plotted between $\log_{10} [A]_0/[A]_t$ on y-axis and time (t) on x-axis, slope of the graph is equal to ____.

- (A) -k (B) k
(C) -k/2.303 (D) k/2.303

171

The number of asymmetric carbon atom in the glucose molecule in open and cyclic form is:

- (A) Four, Five (B) Four, Four
(C) Five, Four (D) Five, six

172 When ethanol and KI reacted in presence of Na_2CO_3 , the yellow precipitate obtained was that of

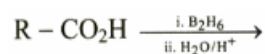
- (A) CH_3I (B) CHI_3 (C) CH_2I_2 (D) $\text{C}_2\text{H}_5\text{I}$

173 Which of the following tests cannot be used for identifying amino acids?

- (A) Barfoed test (B) Xanthoproteic test (C) Biuret test (D) Ninhydrin test

174

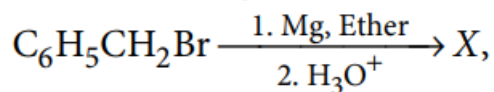
Find the suitable product for the following reaction.



- (A) $\text{R} - \text{CHO}$ (B) 
(C) $\text{R} - \text{CO}_2\text{R}$ (D) 

175

In the following reaction,

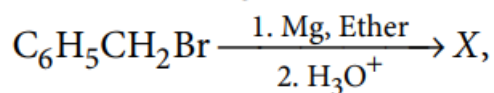


the product 'X' is

- (A) $\text{C}_6\text{H}_5\text{CH}_2\text{OCH}_2\text{C}_6\text{H}_5$ (B) $\text{C}_6\text{H}_5\text{CH}_2\text{OH}$
 (C) $\text{C}_6\text{H}_5\text{CH}_3$ (D) $\text{C}_6\text{H}_5\text{CH}_2\text{CH}_2\text{C}_6\text{H}_5$

176

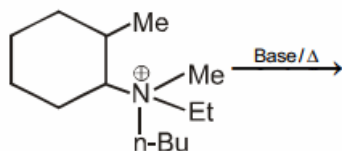
In the following reaction,



the product 'X' is

- (A) $\text{C}_6\text{H}_5\text{CH}_2\text{OCH}_2\text{C}_6\text{H}_5$ (B) $\text{C}_6\text{H}_5\text{CH}_2\text{OH}$
 (C) $\text{C}_6\text{H}_5\text{CH}_3$ (D) $\text{C}_6\text{H}_5\text{CH}_2\text{CH}_2\text{C}_6\text{H}_5$

177



The alkene formed as a major product in the above elimination reaction is :

- (A) (B) $\text{CH}_2=\text{CH}_2$
 (C) (D)

178

Which of the following is least reactive in a nucleophilic substitution reaction?

- (A) $(\text{CH}_3)_3\text{C} - \text{Cl}$ (B) $\text{CH}_2 = \text{CHCl}$
 (C) $\text{CH}_3\text{CH}_2\text{Cl}$ (D) $\text{CH}_2 = \text{CHCH}_2\text{Cl}$

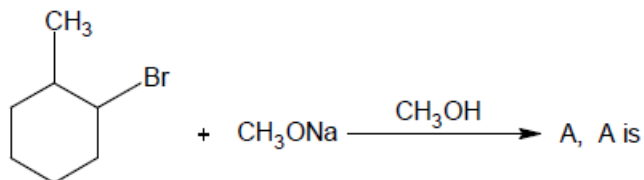
179 The sweetest sugar is

- (A) Sucrose (B) Lactose (C) Galactose (D) Fructose

180 Biodegradable polymer which can be produced from glycine and amino caproic acid is

- (A) buna-N (B) nylon 6, 6
 (C) nylon-2-nylon-6 (D) PHBV

181



- (A) (B) (C) (D)

182

The synthesis of 3-octyne is achieved by adding a bromoalkane into a mixture of sodium amide and an alkyne. The bromoalkane and alkyne respectively are :

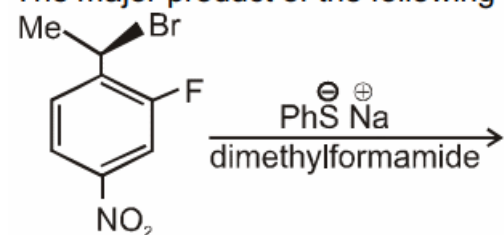
- (A) $\text{BrCH}_2\text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_3$ and $\text{CH}_3\text{CH}_2\text{C}\equiv\text{CH}$ (B) $\text{BrCH}_2\text{CH}_2\text{CH}_3$ and $\text{CH}_2\text{CH}_2\text{C}\equiv\text{CH}$
 (C) $\text{BrCH}_2\text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_3$ and $\text{CH}_3\text{C}\equiv\text{CH}$ (D) $\text{BrCH}_2\text{CH}_2\text{CH}_2\text{CH}_3$ and $\text{CH}_3\text{CH}_2\text{C}\equiv\text{CH}$

183 Which of the following vitamins contains isoprene unit ?

- (A) vitamin A (B) vitamin B₂
 (C) vitamin C (D) vitamin D

184

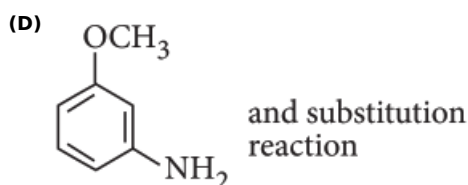
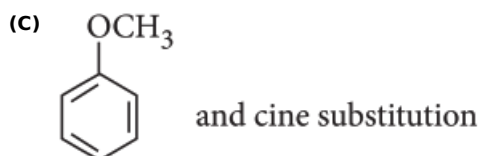
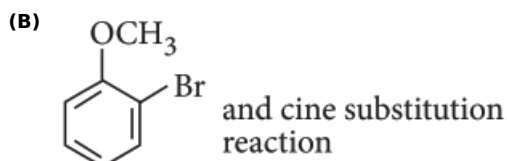
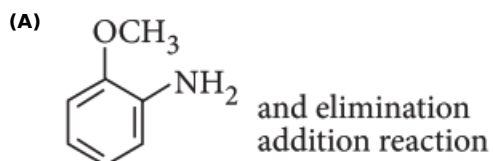
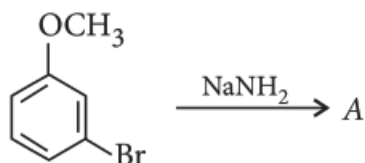
The major product of the following reaction is



- (A) (B)
 (C) (D)

185

Identify A and predict the type of reaction.



186

Which of the following product will be obtained when neopentyl alcohol is treated with conc. HCl in presence of ZnCl₂.

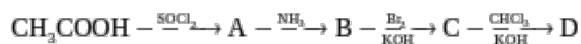
(A) t-butyl chloride

(B) isobutylene

(C) t-pentyl chloride

(D) Neo pentyl chloride

187



Identify D in above reaction sequence.

(A) CH₃CH₂NC(B) CH₃ - NC(C) CH₃CH₂OH(D) CH₃CN

188

Glucose and fructose gives same osazone.

STATEMENT - 2

STATEMENT - 1 During osazone formation stereochemistry at C₁ and C₂ is destroyed.

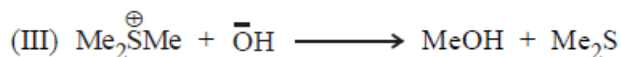
(A) Statement - 1 is True,
Statement - 2 is True;
Statement - 2 is a correct
explanation for Statement - 1.

(B) Statement - 1 is True,
Statement - 2 is True;
Statement - 2 is NOT a correct
explanation for Statement - 1.

(C) Statement - 1 is True,
Statement - 2 is False.

(D) Statement - 1 is False,
Statement - 2 is True.

189

in which of the S_N2 reaction rate of the reaction increases on increasing the polarity of the solvents

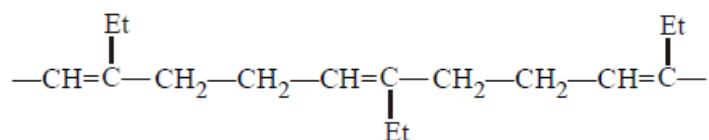
(A) I

(B) II`

(C) III

(D) IV

190 The structure of monomer from which the below polymer is obtained is



- (A) $\text{CH}_2=\overset{\text{Et}}{\underset{|}{\text{C}}}\text{---CH}_2$ (B) $\text{CH}_3\text{---CH}=\overset{\text{Et}}{\underset{|}{\text{C}}}\text{---CH}_3$ (C) $\text{CH}=\overset{\text{Et}}{\underset{|}{\text{C}}}\text{---CH}_2\text{---CH}_3$ (D) $\text{H}_2\text{C}=\text{CH---CH}_2\text{---CH}=\overset{\text{Et}}{\underset{|}{\text{C}}}\text{---CH}_2$

191

Sucrose on hydrolysis gives

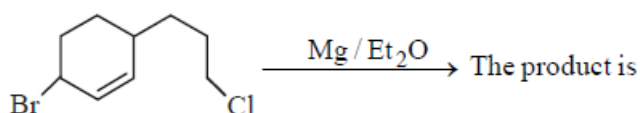
- (A) $\beta\text{-D-glucose} + \alpha\text{-D-fructose}$ (B) $\alpha\text{-D-glucose} + \beta\text{-D-glucose}$
 (C) $\alpha\text{-D-glucose} + \beta\text{-D-fructose}$ (D) $\alpha\text{-D-fructose} + \beta\text{-D-fructose}$

192

The compressibility factor of a gas is greater than unity at 1 atm and 273 K. Therefore :-

- (A) $V_m > 22.4 \text{ L}$ (B) $V_m < 22.4 \text{ L}$
 (C) $V_m = 22.4 \text{ L}$ (D) $V_m = 44.8 \text{ L}$

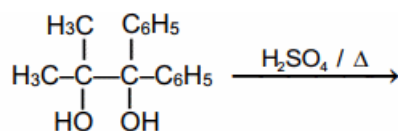
193



- (A)  (B)  (C)  (D) 

194

Identify the major product formed in the following reaction

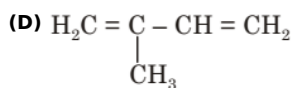
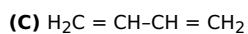
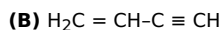
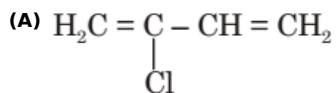


- (A)  (B) 
 (C)  (D) 

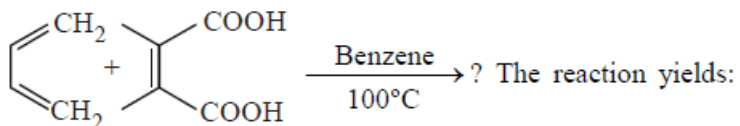
195 Ring structure of glucose is due to formation of hemiacetal and ring formation between

- (A) C_1 and C_5 (B) C_1 and C_4 (C) C_1 and C_3 (D) C_3 and C_4

196 Which is a monomer of Neoprene in the following?



197



(A) a single product

(B) two products

(C) three products

(D) none of these

198 1-chlorobutane on reduction with alcoholic KOH gives

(A) 1-butene

(B) 1-butanol

(C) 2-butene

(D) 2-butanol

199 On treating glucose with Fehling's solution we get a precipitate whose colour is

(A) Yellow

(B) Red

(C) Black

(D) White

200

Which of the following compounds can form a zwitter ion?

(A) Aniline

(B) Acetanilide

(C) Benzoic acid

(D) Glycine