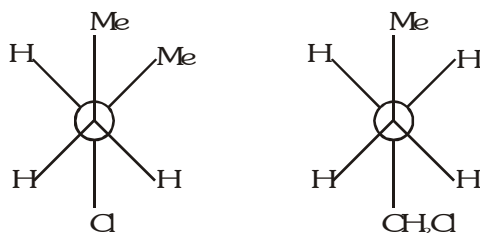


## EXERCISE-II

- Q.1 The compounds  $C_2H_5OC_2H_5$  and  $CH_3OCH_2CH_2CH_3$  are  
 (1) chain isomers (2) geometrical isomers  
 (3) metamers (4) conformational isomers
- Q.2 The number of primary, secondary and tertiary amines possible with the molecular formula  $C_3H_9N$  respectively.  
 (1) 1, 2, 2 (2) 1, 2, 1 (3) 2, 1, 1 (4) 3, 0, 1
- Q.3 Ethylethanoate and  $\alpha$ -methyl propionic acid are –  
 (1) Chain isomers (2) Functional isomers  
 (3) Geometrical isomers (4) Optical isomers
- Q.4 The pair of structures represents :-



- (1) Enantiomers (2) Position isomers (3) Conformers (4) None

- Q.5 Which of the following compounds will exhibit geometrical isomerism –  
 (1) 1-Phenyl-2-butene (2) 3-Phenyl-1-butene  
 (3) 2-Phenyl-1-butene (4) 1,1-Diphenyl-1-propene
- Q.6 Which of the following has incorrect relation

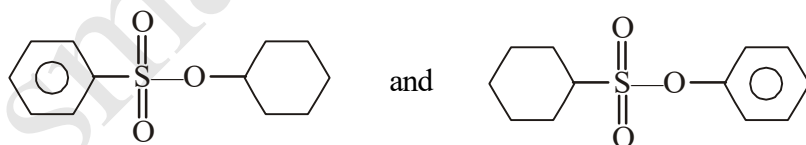
- (1) & identical
- (2) & positional isomers
- (3) & positional isomers
- (4) & homologues

- Q.7 Which of the following compounds can exist as geometrical isomers –  
 (1)  $\text{CH}_2\text{Cl}_2$  (2)  $\text{CH}_2\text{Cl} - \text{CH}_2\text{Cl}$   
 (3)  $\text{CHBr} = \text{CHCl}$  (4)  $\text{CH}_2\text{Cl} - \text{CH}_2\text{Br}$
- Q.8 The simplest alkanol exhibiting optical activity is  
 (1) n-butyl alcohol (2) Isobutyl alcohol (3) s-butyl alcohol (4) t-butyl alcohol
- Q.9 Which of the following pairs of compounds are not isomers -  
 (1) Propyne and cyclopropene (2) Propyne and propadiene  
 (3) Propene and cyclopropene (4) 1-Propanol and methoxyethane
- Q.10 The type of isomerism observed in urea molecule is  
 (1) Chain (2) Position (3) Geometrical (4) Functional
- Q.11 Among the following compounds, the one which does not show geometrical isomerism is -  
 (1)  $\text{C}_6\text{H}_5\text{N} = \text{NC}_6\text{H}_5$  (2)  $\text{C}_6\text{H}_5\text{CH} = \text{CHC}_6\text{H}_5$   
 (3)  $\text{C}_6\text{H}_5 - \underset{\text{CH}_3}{\text{C}} = \text{N} - \text{OH}$  (4)  $\text{C}_6\text{H}_5 - \underset{\text{C}_6\text{H}_5}{\text{C}} = \text{N} - \text{CH}_3$
- Q.12 How many minimum no. of C-atoms are required for position & geometrical isomerism in alkene?  
 (1) 4, 3 (2) 4, 4 (3) 3, 4 (4) 3, 3

- Q.13  Exhibits :-  
 (1) Tautomerism (2) Optical isomerism  
 (3) Geometrical isomerism (4) Geometrical and optical isomerism

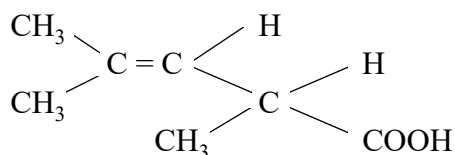
- Q.14 Which of the following compounds has no geometrical isomer -  
 (1) 1-Phenylpropene (2) 1, 2-Diphenylethene  
 (3) 1, 2-Diphenylpropene (4) 1,1-Diphenylpropene

- Q.15 Given compound shows which type of isomerism



- (1) Chain isomerism (2) Positional isomerism  
 (3) Metamerism (4) Functional group isomerism

- Q.16 The following compound can exhibit -

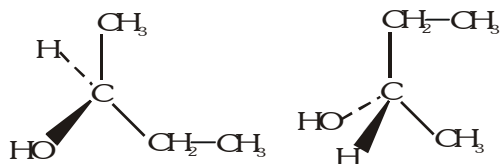


- (1) Geometrical isomerism (2) Geometrical and optical isomerisms

(3) Optical isomerism

(4) Tautomerism

Q.17 The pair of structures given below represents :

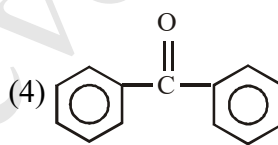
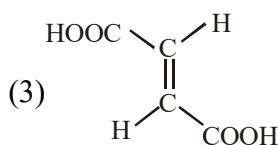
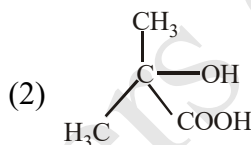
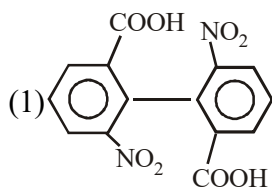


- (1) Enantiomers      (2) Diastereomers      (3) Homomers      (4) Position isomers

Q.18 Which of the following does not show geometrical isomerism?

- (1) 1, 2-dichloro-1-pentene      (2) 1, 3-dichloro-2-pentene  
 (3) 1, 1-dichloro-1-pentene      (4) 1, 4-dichloro-2-pentene

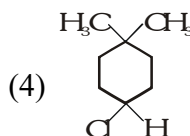
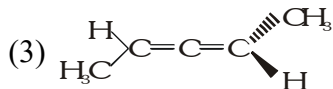
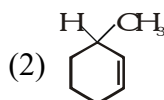
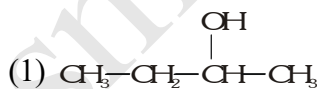
Q.19 Which compound would exhibit optical isomers—



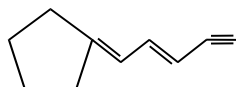
Q.20 Which of the following statements is not correct ?

- (1) Molecules that are superimposable on their mirror images are chiral  
 (2) Molecules that are not superimposable on their mirror images are chiral  
 (3) A compound whose molecules are chiral can exist as enantiomers  
 (4) A compound whose molecules are achiral can not exist as enantiomers

Q.21 Which of the following compounds is optically inactive:



Q.22 The number of cis-trans isomer possible for the following compound

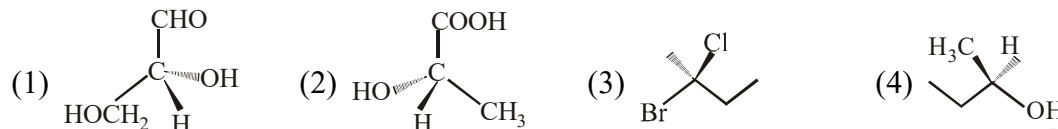


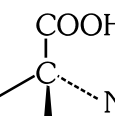
- (1) 2      (2) 4      (3) 6      (4) 8

Q.23 Which of the following starred C – atom is asymmetric –

- (1)  $\text{CH}_3\text{CH}_2\overset{*}{\text{C}}\text{HCH}_3\text{CH}_2\text{OH}$                       (2)  $\text{CH}_3\text{CH}_2\text{CH}\overset{*}{\text{C}}\text{H}_3\text{CH}_2\text{OH}$   
 (3)  $\text{CH}_3\overset{*}{\text{C}}\text{H}_2\text{CHCH}_3\text{CH}_2\text{OH}$                       (4)  $\text{CH}_3\text{CH}_2\text{CHCH}_3\overset{*}{\text{C}}\text{H}_2\text{OH}$

Q.24 Which of the following structures has the S-configuration at the chiral centre ?



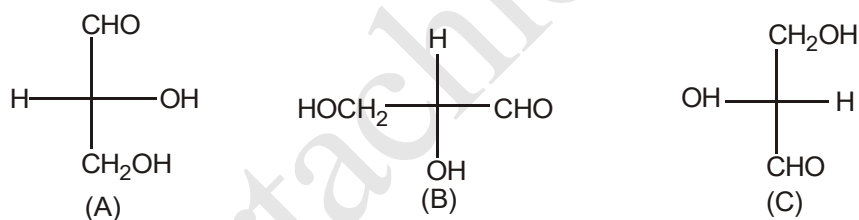
Q.25 Compound  is :-

- (1) D-form                      (2) L-form                      (3) R-form                      (4) Z-form

Q.26 Increasing order of stability among the three main conformation (i.e. eclipse, anti, gauche) of ethylene glycol is:

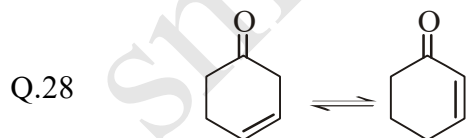
- (1) Eclipse, gauche, anti                      (2) Gauche, eclipse, anti  
 (3) Eclipse, anti, gauche                      (4) Anti, gauche, eclipse

Q.27 In plane clockwise rotation of the projection formula (A) of a compound by  $90^\circ$  and  $180^\circ$  yields the projection formulae (B) and (C) respectively -



Which of the following statements is not correct about (A), (B) and (C) -

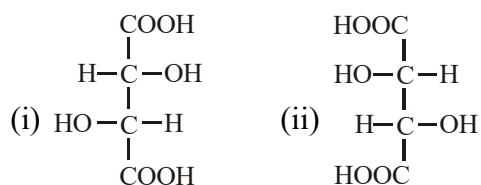
- (1) A and B are enantiomers                      (2) A and C are identical  
 (3) B and C are enantiomers                      (4) A and C are enantiomers



Above interconversion takes place in

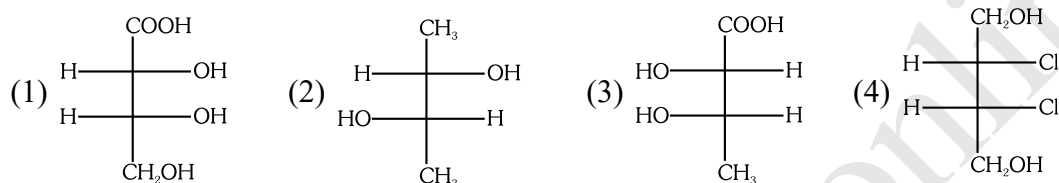
- (1) Acidic medium                      (2) Basic medium                      (3) Both                      (4) None

Q.29 The two isomers given below are -



- (1) enantiomers      (2) diastereomers      (3) mesomers      (4) position isomers

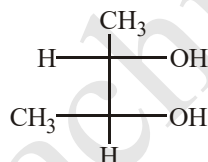
Q.30 Which one of the following is a meso-compound.



Q.31 Which of the following compounds can exist both as a cis pair of enantiomers and a trans pair of enantiomers -

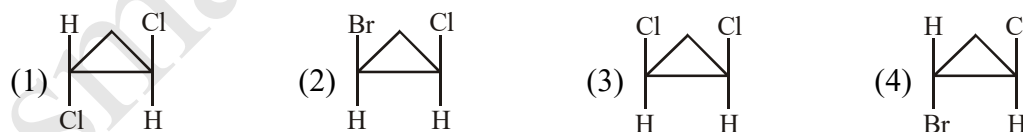
- (1)  $\text{CH}_3\text{CHClCH}=\text{CH}_2$       (2)  $\text{CH}_3\text{CHClCH}=\text{CHCH}_3$   
 (3)  $\text{CH}_2=\text{CH}-\text{CHOHCH}=\text{CH}_2$       (4)  $\text{CH}_2=\text{CH}-\text{CHClCH}=\text{C}(\text{CH}_3)_2$

Q.32 Correct configuration of the following is -

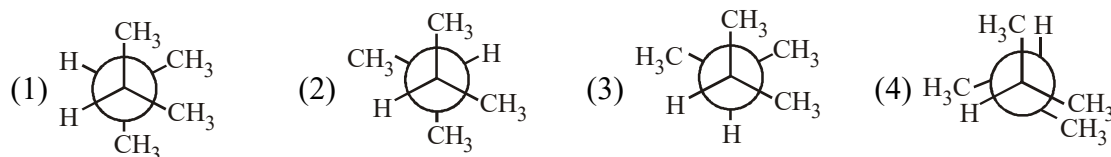


- (1) 2S, 3S      (2) 2S, 3R      (3) 2R, 3S      (4) 2R, 3R

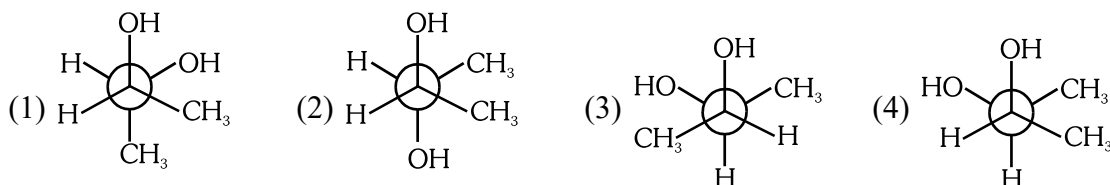
Q.33 Which of the following compounds is a meso compound -



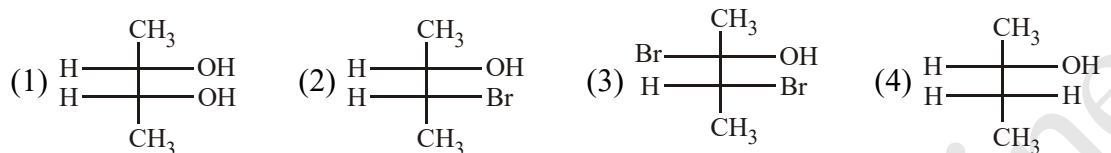
Q.34 The most stable conformation of 2,3-dimethylbutane is -



Q.35 Which one of the following is the most stable conformation of 2,3-butanediol :-



Q.36 Which of the following structures represents a threo-stereoisomer -

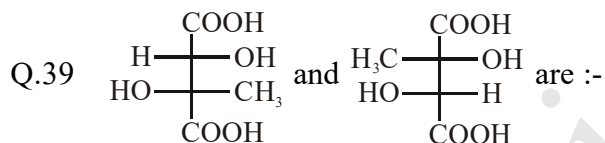


Q.37 How many isomers of  $C_5H_{11}OH$  will be primary alcohols :-

- (1) 2 (2) 3 (3) 4 (4) 6

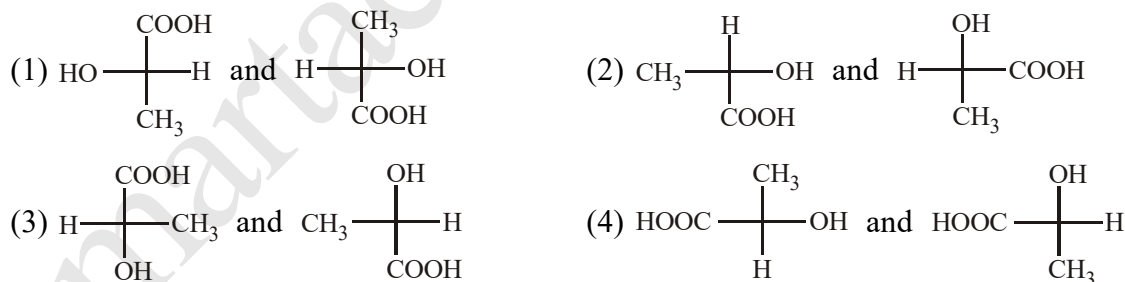
Q.38 2-Butene exhibits geometrical isomerism due to -

- (1) rotation about the double bond  
 (2) rotation about  $C_3-C_4$  bond  
 (3) restricted rotation about the double bond  
 (4) rotation about  $C_1-C_2$  bond



- (1) Enantiomers (2) Position isomers (3) Geometrical isomers (4) Homomers

Q.40 Which of the following pairs of structures represent enantiomers -



Q.41 Number of structural isomers of  $C_6H_{14}$  is -

- (1) 3 (2) 4 (3) 5 (4) 6

### ANSWER KEY

Q.1	3	Q.2	3	Q.3	2	Q.4	2	Q.5	1	Q.6	2	Q.7	3
Q.8	3	Q.9	3	Q.10	4	Q.11	4	Q.12	2	Q.13	2	Q.14	4
Q.15	3	Q.16	3	Q.17	3	Q.18	3	Q.19	1	Q.20	1	Q.21	4
Q.22	1	Q.23	1	Q.24	2	Q.25	2	Q.26	3	Q.27	4	Q.28	3
Q.29	1	Q.30	4	Q.31	2	Q.32	1	Q.33	3	Q.34	2	Q.35	3
Q.36	3	Q.37	3	Q.38	3	Q.39	4	Q.40	2	Q.41	3		