JEE MAIN ANSWER KEY & SOLUTIONS

SUBJECT :- CHEMISTRY
CLASS :- 11th **PAPER CODE :- CWT-11**
CHAPTER :- ISOMERISM

ANSWER KEY

1.	(D)	**2.**	(C)	**3.**	(C)	**4.**	(B)	**5.**	(B)	**6.**	(D)	**7.**	(C)
8.	(B)	**9.**	(A)	**10.**	(A)	**11.**	(C)	**12.**	(D)	**13.**	(D)	**14.**	(D)
15.	(D)	**16.**	(D)	**17.**	(B)	**18.**	(B)	**19.**	(D)	**20.**	(C)	**21.**	3
22.	5	**23.**	1	**24.**	8	**25.**	5	**26.**	6	**27.**	8	**28.**	4
29.	4	**30.**	4										

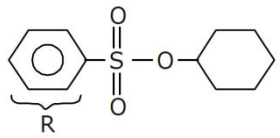
SOLUTIONS

1. (D)

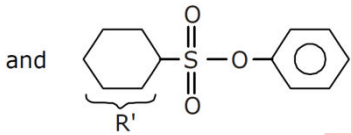
Sol. $CH_3–CH_2–CHO$ & $CH_3-\overset{\overset{O}{\|}}{C}-CH_3$

are functional isomers.

2. (C)



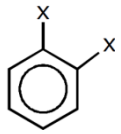
Sol.



R & R' are different hence show Metamerism.

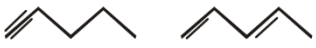
3. (C)

Sol. ortho, meta, para



4. (B)

Sol.



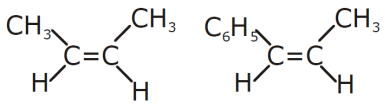
Functional isomers

5. (B)

Sol. The number of ether metamers is 3.

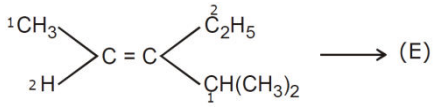
6. (D)

Sol. both A and C



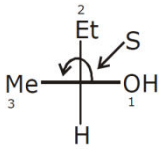
7. (C)

Sol.



8. (B)

Sol.



9. (A)

Sol. OH group on the carbon number 2 and 3 will be on the left hand side of the diagrams given the options.

10. (A)

Sol. Resolution

11. (C)

Sol. Neither laevo nor dextro rotatory due to internal compensation.

12. (D)

Sol. A compound can be divided into two equal halves and contains even asymmetric carbon atoms. The number of stereoisomers is $2^{n-1} + 2^{n/2-1}\ 2^{n/2-1}$ represents number of meso forms.

13. (D)

Sol. 360° rotation

14. (D)

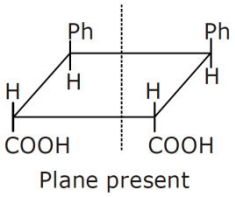
Sol. Keto-enol tautomerism

15. (D)

Sol. It does not have α H

16. (D)

Sol. Only (D) compound has plane of symmetry.



Plane present

17. (B)

Sol. → This compound show G.I.

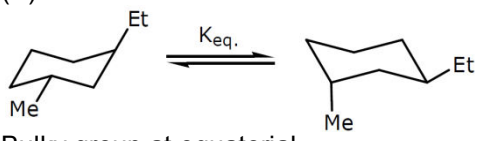
→ This compound show plane of symmetry.

→ This compound show optical isomers because this shows different orientation in 3D.

→ But this compound does not posses center of symmetry.

18. (B)

Sol.

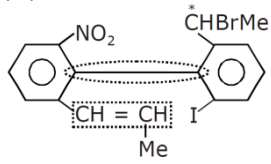


Bulky group at equatorial.

$\frac{k_f}{k_b} > 1$ So $k > 1$

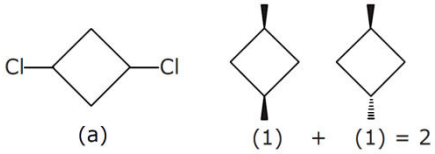
19. (D)

Sol.

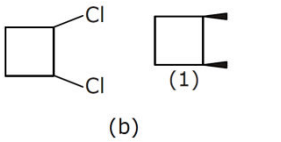


Asymmetric $2^3 = 8$

20. (C)

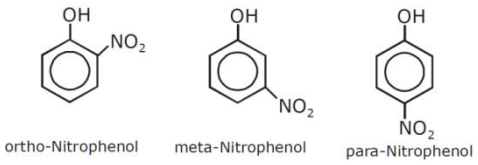


Sol.



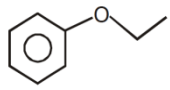
21. 3

Sol.

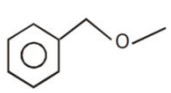


22. 5

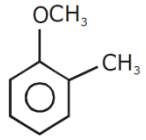
Sol. (i)



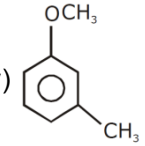
(ii)



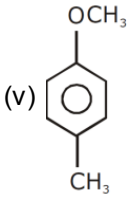
(iii)



(iv)

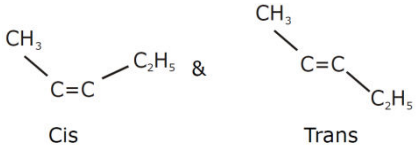


(v)



23. 1

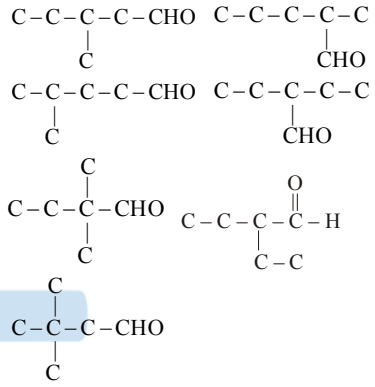
Sol.



Cis Trans

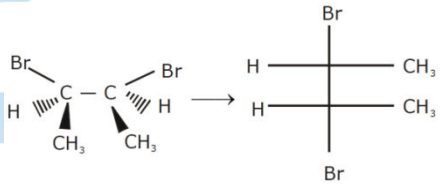
24. 8

Sol. Explanation : C–C–C–C–C–CHO



25. 5

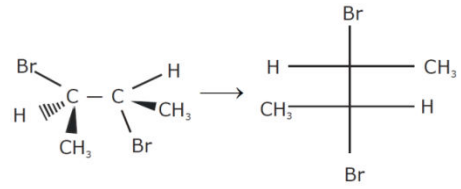
Sol. (i)



Plane of symmetry is present meso

Centre of symmery is present

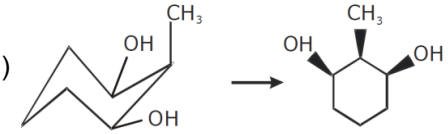
(ii)



Plane of symmetry is absent chiral

Centre of symmery is absent

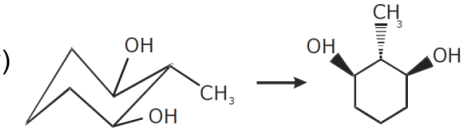
(iii)



Plane of symmetry is present meso

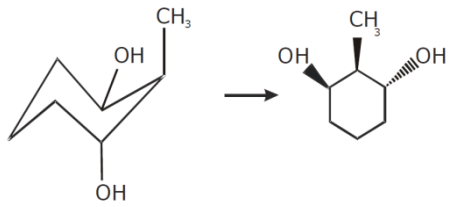
Centre of symmery is absent

(iv)

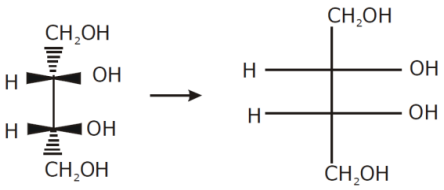


Plane of symmetry is present meso

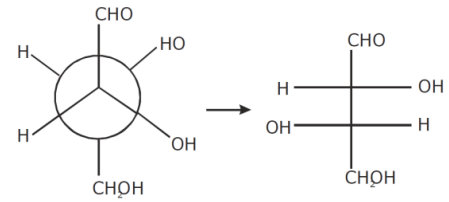
Centre of symmery is absent

(v) 

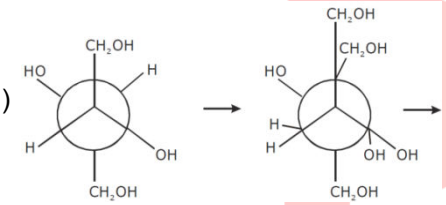
Plane of symmetry is absent chiral
Centre of symmery is absent

(vi) 

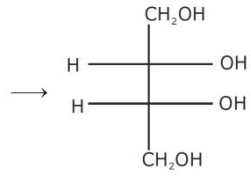
Plane of symmetry is present meso
Centre of symmery is present

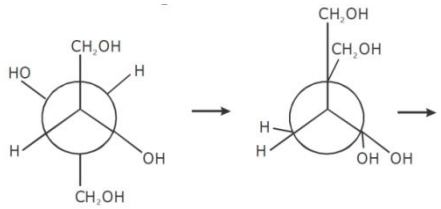
(vii) 

Plane of symmetry is absent chiral
Centre of symmery is absent

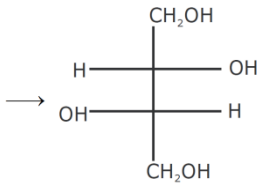
(viii) 

Plane of symmetry is present meso
Centre of symmery is present

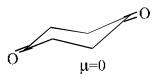


(ix) 

Plane of symmetry is absent chiral
Centre of symmery is absent



26. 6

Sol.  twist boat $\mu = 0$

$\mu_{net} = \mu_{chair}\, x_{chair} + m_{t.b.}\, x_{t.b.}$

$1.2 = 0 + \mu_{t.b.}\ (0.20)$

$\Rightarrow \quad \mu_{t.b.} = 6.0$ debye

$\because \quad x_{chair} = 0.80$

$\therefore x_{t.b.} = 1 - 0.80 \Rightarrow 0.2]$

27. 8

Sol. $Br{-}CH = CH{-}CH_2{-}CH = C{=}CH{-}CH_2{-}CH{=}CH{-}CH_2{-}CH{=}C{=}C{=}CH{-}CH =$

(i)G.I. O.I. (ii) G.I. (iii)G.I.

$2^n = 2^3 = 8$

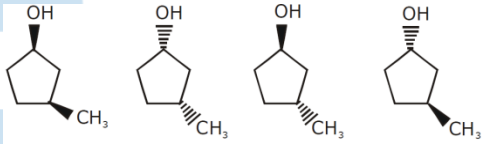
28. 4

Sol. 

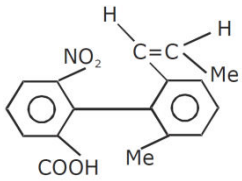
$n \to 2$

$\therefore$ number of geometrical isomers $= 2^n = 2^2 = 4$ Ans.

29. 4

Sol. 

30. 4

Sol. 

Stereogenic area =2

Total stereoisomers= $2^2 = 4$