Worksheet Stereoisomerism

Chemistry Affinity
Conceptual, Real world, Happy Learning

Designed by
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1. Which among the following correctly defines Diastereomer?

a) These have same magnitude but different signs of optical rotation
b) Nonsuperimposable object mirror relationship
c) These differ in all physical properties
d) Separation is very difficult

2. Identify the chiral molecule among the following.

a) Isopropyl alcohol
b) 2-pentanol
c) 1-bromo 3-butene
d) Isobutyl alcohol

https://www.sanfoundry.com/organic-chemistry-questions-answers-isomerism/

3. Two possible stereo-structure of $CH_3CH(OH)COOH$, which are optically active are called

(a) enantiomers, (b) mesomers © diastereomers, (d) atropisomers

4. If n represents a total number of asymmetric carbon atoms in a compound, the possible number of optical isomers of the compound is

(a) 2n, (b) n^2 © 2^n (d) 2n+2

5. 3-Methylpent-2-ene on reaction with HBr I presence of peroxide forms an addition product. The number of possible stereopisomers for the product is

(a) six, (b) zero © two (d) four [JEE (main) 2017]

6. (+) 2-Methylbutan-1-ol and (-) 2-Methylbutan-1-ol have different values for which property?

(a) Boiling point, (b) Relative density © Refractive index (d) Specific rotation [MHT CET 2017]

7. Which of the following is an optically active compound

(a) Butan-1-ol, (b) Propan-1-ol© 2-chlorobutane (d) 4-Hydroxyheptane

8. An alkyne has molar mass 96. How many different isomers (excluding stereoisomers) are possible considering all of them are internal alkynes?

(a) 3, (b) 4, (c) 6, (d) 8

9. How many structural isomers are possible for compounds containing C, H, O atoms with their molar masses 100 as well as the isomers are simultaneously ketones?
(a) 3, (b) 4, (c) 5, (d) 6

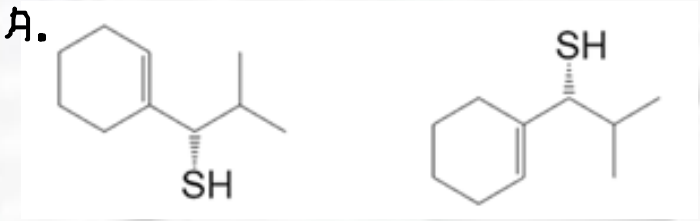
10. How many alkene isomers are possible for compound with molecular formula C_5H_{10} (a) 3, (b) 4, (c) 5, (d) 6

11. Which of the following halide is capable of exhibiting enantiomeism (a) Ethyl chloride, (b) Isopropyl bromide, (c) sec-Butyl iodide, (d) tert-butyl chloride

12. Optical isomerism is exhibited by (a) 1,2-dichloropropane (b) 1,1-dichloropropane, (c) 2,2-dichloropropane(d) 1,3-dichloropropane

13. What are the relationship between the pair of molecules: (structural isomers/enantiomer/diastereomers/identical)

A.



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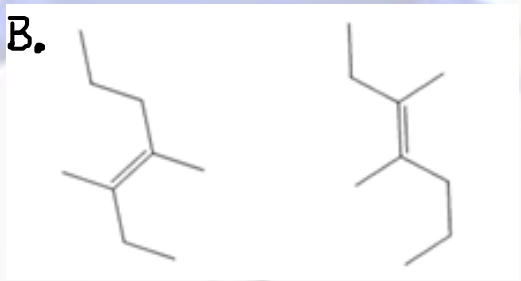

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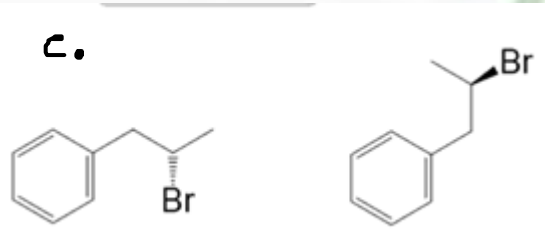

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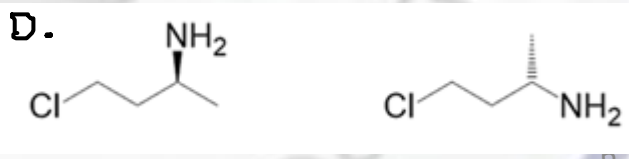
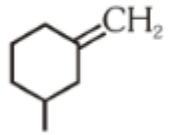
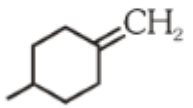
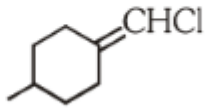
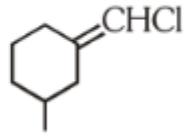


14. The geometrical isomerism is shown by :- **[AIIMS-2004]**

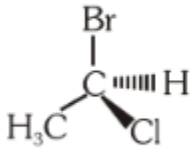
(1) 

(2) 

(3) 

(4) 

15. The configuration of the given compound is :- **[AIPMT-2005]**

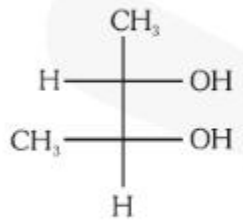


(1) E (2) R (3) S (4) Z

16. Which one of the following pairs represents stereo isomerism :- **[AIPMT-2005]**

(1) Linkage isomerism and Geometrical isomerism
(2) Chain isomerism and Rotational isomerism
(3) Optical isomerism and Geometrical isomerism
(4) Structural isomerism and Geometrical isomerism

17. Correct configuration of the following is :- **[AIIMS-2005]**



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

18. Among the following which one can have a meso form – **[AIIMS-2006]**

(1) $CH_3CH(OH)CH(Cl)C_2H_5$ (2) $CH_3CH(OH)CH(OH)CH_3$

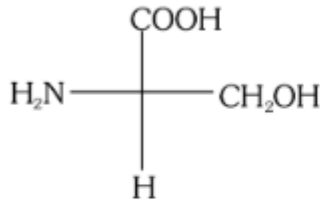
(3) $C_2H_5CH(OH)CH(OH)CH_3$ (4) $HOCH_2CH(Cl)CH_3$

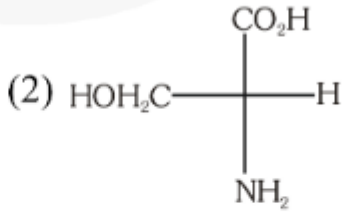
19. Which of the following is not chiral :- **[AIPMT-2006]**

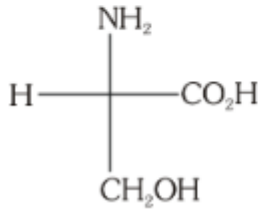
(1) 2–Butanol (2) 2,3–Dibromo pentane

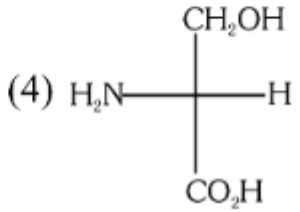
(3) 3–Bromo pentane (4) 2–Hydroxy propanoic acid

20. Among the following L–serine is – **[AIIMS-2006]**

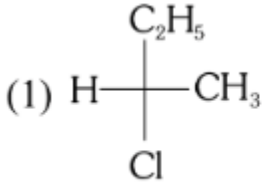
(1) 

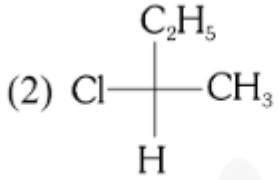
(2) 

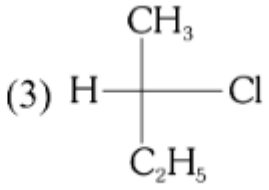
(3) 

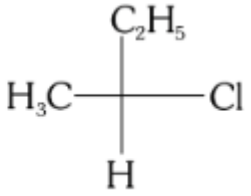
(4) 

21. $CH_3—CHCl—CH_2—CH_3$ has a chiral centre which one of the following represents its R configuration. **[AIPMT-2007]**

(1) 

(2) 

(3) 

(4) 

22. How many stereoisomer does this molecule have $CH_3CH=CHCH_2CHBrCH_3$?

(1) 8 (2) 2 **[AIPMT-2008]**

(3) 4 (4) 6

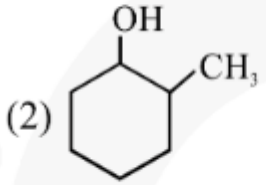
23. Which of the following compounds will exhibit cis-trans (geometrical) isomerism ?

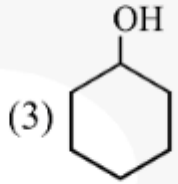
(1) 1-Butanol (2) 2-Butene **[AIPMT-2009]**

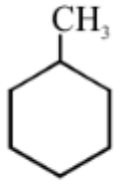
(3) 2-Butanol (4) 2-Butyne

24. Which of the following is optically active :- **[AIIMS-2010]**

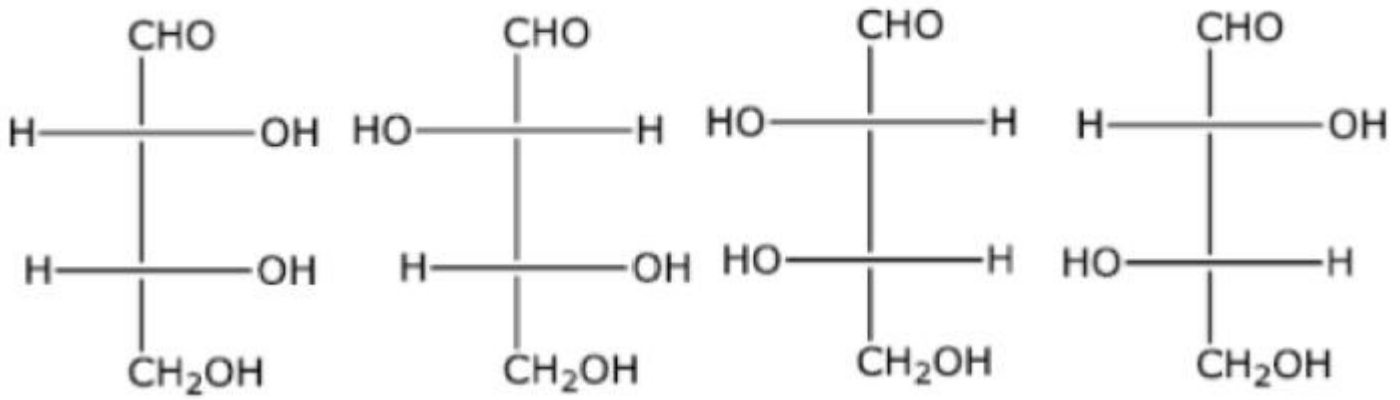
(1) 

(2) 

(3) 

(4) 

25. The correct corresponding order names of four aldoses with configuration given below :



respectively, is :- **[NEET-II 2016]**

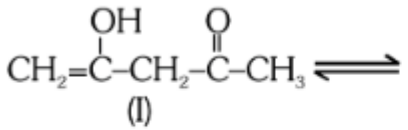
(1) L-erythrose, L-threose, D-erythrose, D-threose

(2) D-erythrose, D-threose, L-erythrose, L-threose

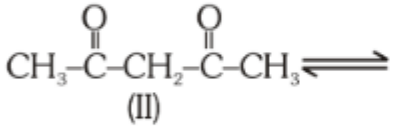
(3) L-erythrose, L-threose, L-erythrose, D-threose

(4) D-threose, D-erythrose, L-threose, L-erythrose

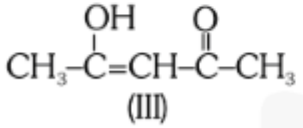
26. The order of stability of the following tautomeric compounds is :- **[NEET-UG 2013]**



(I)



(II)



(III)

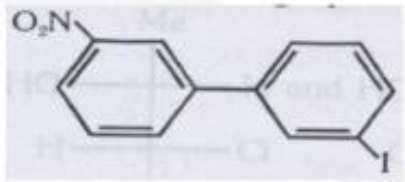
(1) II > III > I (2) I > II > III (3) III > II > I (4) II > I > III

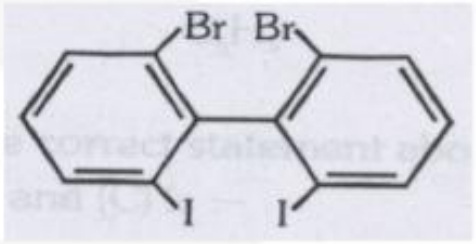
27. When trans -2-Butene is reacted with Br_2 then product is formed :- **[AIIMS 2013]**

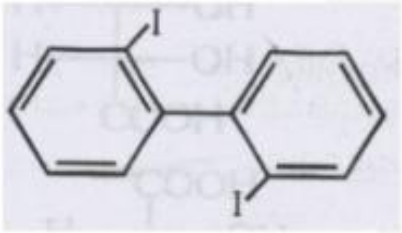
(1) Racemic-2, 3-dibromobutane (2) Meso-2, 3-dibromobutane

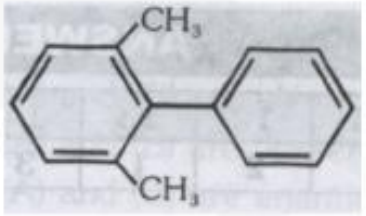
(3) d-2, 3-dibromobutane (4) ℓ-2, 3-dibromobutane

28. Which of the following biphenyls is optically active? **[NEET-I 2016]**

(1) 

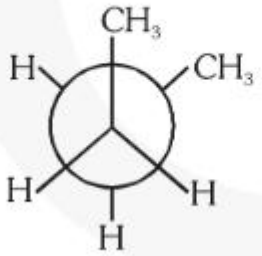
(2) 

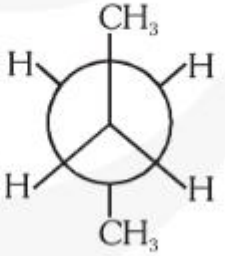
(3) 

(4) 

29. In the following the most stable conformation of n–butane is :- **[AIPMT-2010]**

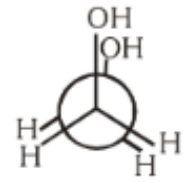
(1) 

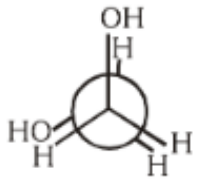
(2) 

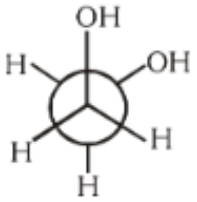
(3) 

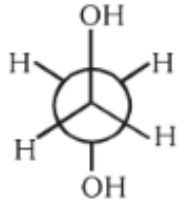
(4) 

30. Which of the following conformers for ethylene glycol is most stable :- **[AIPMT-2010]**

(1) 

(2) 

(3) 

(4) 

All The Best