

Ashoka Scientific Forum

Developing Scientific Temper Among Students

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ORGANIC ASSIGNMENT

STEREOCHEMISTRY

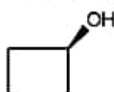
1. Is the molecule shown below chiral or achiral?



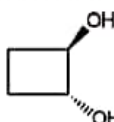
2. Is the molecule shown below chiral or achiral?



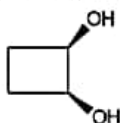
3. Is the molecule shown below chiral or achiral?



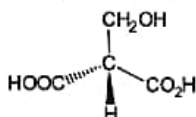
4. Is the molecule shown below chiral or achiral?



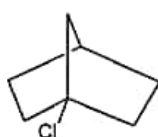
5. Is the molecule shown below chiral or achiral?



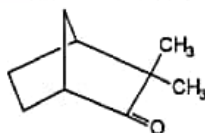
6. Is the molecule shown below chiral or achiral?



7. Is the molecule shown below chiral or achiral?



8. Is the molecule shown below chiral or achiral?



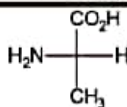
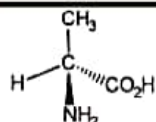
9. What is the relation between shown compounds?



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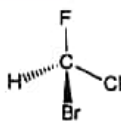
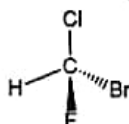
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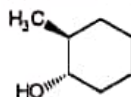
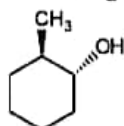
- (a) Enantiomers (b) Diastereomers (c) Same (d) None of these

10. Which of the following term best describes the pair of compound shown:



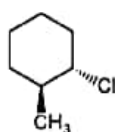
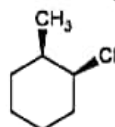
- (a) Enantiomers (b) Diastereomers (c) Same (d) None of these

11. Which of the following term best describes the pair of compound shown:



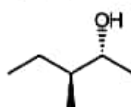
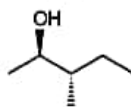
- (a) Enantiomers (b) Diastereomers (c) Same (d) Meso

12. Which of the following term best describes the pair of compound shown:



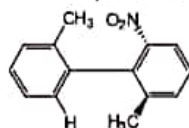
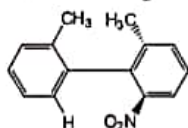
- (a) Enantiomers (b) Diastereomers (c) Same (d) None of these

13. Which of the following term best describes the pair of compound shown:



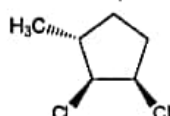
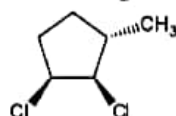
- (a) Same (b) Enantiomers (c) Diastereomers (d) None of these

14. Which of the following term best describes the pair of compound shown:



- (a) Diastereomers (b) Enantiomers (c) Meso (d) None of these

15. Which of the following term best describes the pair of compound shown:



- (a) Diastereomers (b) Enantiomers (c) Meso (d) None of these

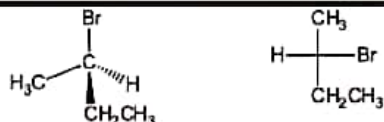
16. Which of the following term best describes the pair of compound shown:



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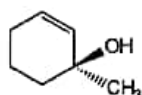
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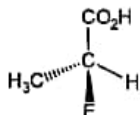


- (a) Same (b) Enantiomers (c) Meso (d) None of these

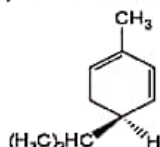
17. What configuration does the following compound has:



18. What configuration does the following compound has:

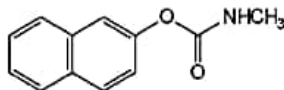


19. How many asymmetric carbon are present in the compound below:



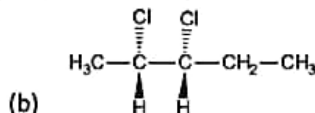
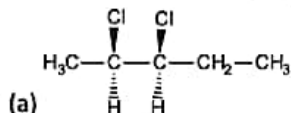
- (a) 4 (b) 2 (c) 1 (d) 0

20. How many asymmetric carbon are present in the compound below:



- (a) 1 (b) 4 (c) 3 (d) 0

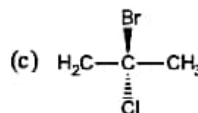
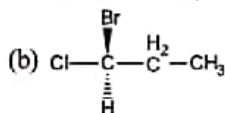
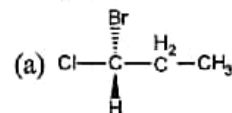
21. Draw the structure of (2R, 3S) - 2, 3 - dichloropentane



(c) Both

(d) None of these

22. Draw the structure of (S)-1-bromo-1-chloropropane:



(d) None of these

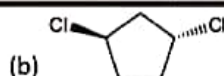
23. Draw the structure of the Meso form of 1, 3-dichlorocyclopentane:



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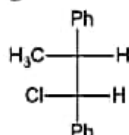
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(c) Both

(d) None of these

24. The absolute configuration of asymmetric center in the following:



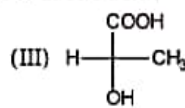
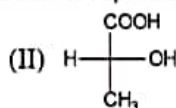
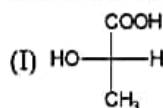
(a) 1 R, 2 S

(b) 1 S, 2 R

(c) 1 R, 2 R

(d) 1 S, 2 S

25. Which of the following structure representation is R-Lactic acid?



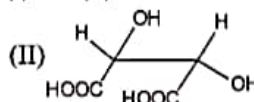
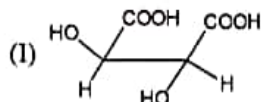
(a) (I)

(b) (II)

(c) (III)

(d) None of these

26. An equimolar mixture of the conformation (I) and (II) of tartaric acid would give:



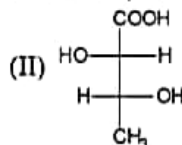
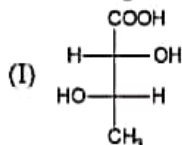
(a) Meso Tartaric acid

(b) (+) Tartaric acid

(c) (-) Tartaric acid

(d) Racemic Tartaric acid

27. Which of the following term best describes the pair of compound shown below:



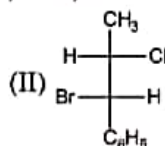
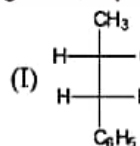
(a) Diastereomers

(b) Enantiomers

(c) Both

(d) None of these

28. Identify the given compound (I) and (II) in Erythro and Threo:



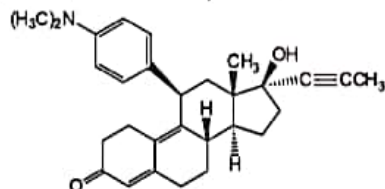
a) 1 → Threo, 2 → Erythro

(b) 1 → Erythro, 2 → Threo

(c) Both Threo

(d) Both Erythro

29. How many asymmetric carbons are present in the compound:



(a) 2

(b) 3

(c) 5

(d) 4

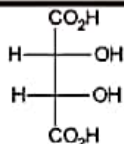
30. How many asymmetric carbons are present in the following compound:



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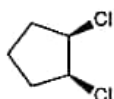
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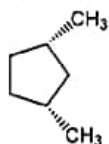
- (a) 5 (b) 1 (c) 4 (d) 2

31. The given compound behaves as:



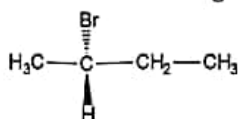
- (a) Meso (b) Diastereomer (c) Enantiomer (d) None of these

32. The given compound behaves as:



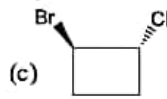
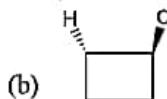
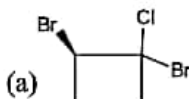
- (a) Enantiomer (b) Diastereomer (c) Meso (d) None of these

33. The configuration that the following compound has:



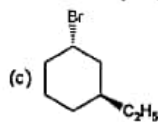
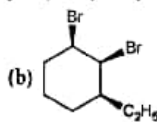
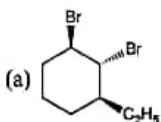
- (a) S (b) R (c) R, S (d) None of these

34. Correct structure of the (1 R, 2 R)-1-bromo-2-chlorocyclobutane is:



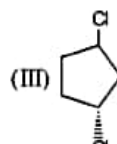
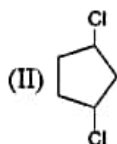
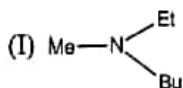
(d) None of these

35. Draw the structure of (1 R, 2 S, 3 S)-1, 2-dibromo-3-ethyl cyclohexane



(d)

36. Which of the following compounds can have enantiomers:



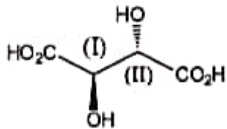
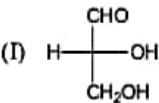
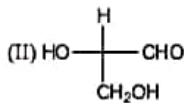
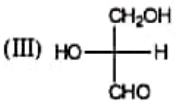
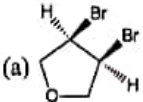
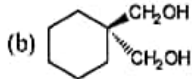
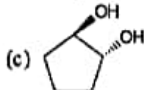
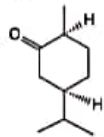
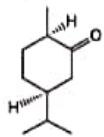
- (a) (I) (b) (II) (c) (III) (d) (II) and (III)

37. A mixture of equal amount of two enantiomers:

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- (a) Is called a racemic mixture (b) Is optically inactive
(c) Is a meso compound (d) Are both (a) and (b)
38. Stereoisomers which are not mirror image isomers are:
(a) Enantiomers (b) Diastereomers (c) Meso compounds (d) None of these
39. Racemisation process is:
(a) Conversion of an optically active compound into the racemic modification
(b) Conversion of an optically inactive compound into the racemic modification
(c) Both
(d) None of the above
40. The configuration of the following position of (I) and (II) is:

 (a) $1 \rightarrow S, 2 \rightarrow R$ (b) $1 \rightarrow R, 2 \rightarrow S$ (c) $1 \rightarrow R, 2 \rightarrow R$ (d) $1 \rightarrow S, 2 \rightarrow S$
41. Resolution is called as:
(a) A separation of two enantiomers (b) A separation of two Diastereomers
(c) Both (d) None of the above
42. Which is the correct structure of D-Glyceraldehyde:
 (I)  (II)  (III)  (IV) All of these
43. Which of the following structure represents meso compounds?
 (a)  (b)  (c)  (d) None of these
44. The two compounds shown below are:
 
 (a) Diastereomers (b) Epimers (c) Enantiomers (d) Resonance structures
45. Which of the following statements is true for the compound (R)-2-butanol?
 (a) This compound is chiral (b) This compound is optically active
 (c) This compound has an enantiomer (d) All of the above
46. Which of the following statement is true for the compound (3R, 4R)-3,4-dimethylhexane?
 (a) This compound is chiral



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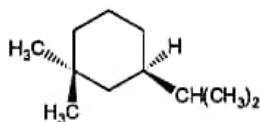
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- (b) This compound is a Diastereomer of (3 R, 4 S)-3,4-dimethyl hexane
(c) The enantiomer of this compound is (3 S, 4S)-3, 4-dimethyl hexane
(d) All of the above

47. Which of the following statement is true for cis-1, 2-dichlorocyclopropane?

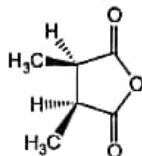
- (a) This compound is chiral
(b) The enantiomers of this compound is trans-1, 2-dichlorocyclopropane
(c) This compound contain no asymmetric carbon
(d) All of the above

48. How many asymmetric carbon atoms are present in the following compound?



- (a) 0 (b) 2 (c) 3 (d) 1

49. How many asymmetric carbon atoms are present in the following compound?



- (a) 0 (b) 2 (c) 3 (d) 1

50. Which of the following term correctly describes the structural relationship between cis-1,3-dimethyl cyclopentane and trans-1,3-dimethyl cyclopentane:

- (a) Enantiomer (b) Diastereomer (c) Geometric Isomer (d) Regionomer

ANSWER KEY

1. Achiral	2. Achiral	3. Achiral	4. Chiral	5. Achiral	6. Achiral	7. Achiral	8. Chiral	9. c	10. b
11. a	12. b	13. a	14. b	15. b	16. b	17. S	18. a	19. c	20. d
21. a	22. b	23. a	24. a	25. b	26. a	27. b	28. b	29. a	30. d
31. a	32. c	33. a	34. c	35. b	36. c	37. d	38. b	39. a	40. b
41. a	42. d	43. a	44. c	45. d	46. d	47. b	48. d	49. b	50. b

