

NEET CHEMISTRY 2018-19 - Chennai

Periodic Test : 06

Test ID : 018

Number of questions: 150

Test date: 25.03.2019

Name: _____

Time: 3HRS

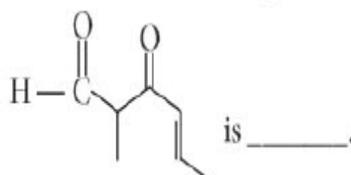
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Negative Marks : 4 marks for correct attempt & 1 mark deducted for every wrong attempt.

1. The most suitable method of 1:1 separation of mixture of ortho and para-nitrophenols

- (a) chromatography
- (b) crystallisation
- (c) steam distillation
- (d) sublimation

2. The IUPAC name of the compound



- (a) 5-formylhex-2-en-3-one
- (b) 5-Methyl-4-oxohex-2-en-5-al
- (c) 3-keto-2-methylhex-5-enal
- (d) 3-keto-2-methylhex-4-enal

3. The correct statement regarding electrophile is

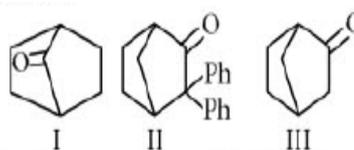
- (a) electrophile is a negatively charged species and can form a bond by accepting a pair of electrons from another electrophile

(b) electrophiles are generally neutral species and can form a bond by accepting a pair of electrons from a nucleophile

(c) electrophile can be either neutral or positively charged species and can form a bond by accepting a pair of electrons from a nucleophile

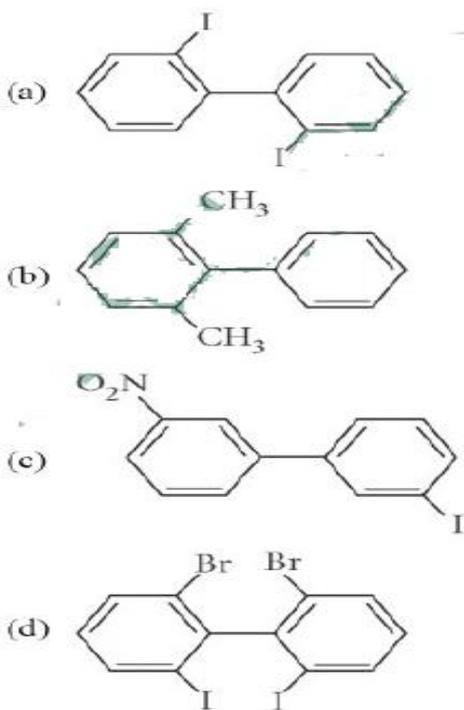
(d) electrophile is a negatively charged species and can form a bond by accepting a pair of electrons from a nucleophile.

4. Which among the given molecules can exhibit tautomerism?

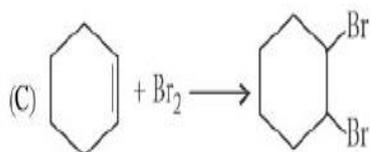
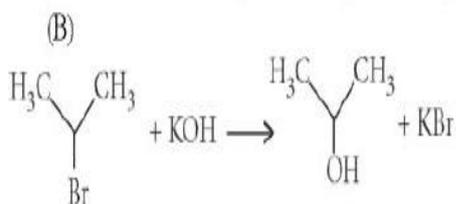
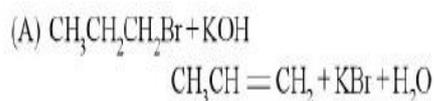


- (a) III only
- (b) Both I and III
- (c) Both I and II
- (d) Both II and III

5. Which of the following statements is correct?



6. For the following reactions



Which of the following statements is correct?

- (a) (A) is elimination, (B) and (C) are substitution reactions.
- (b) (A) is substitution, (B) and (C) are addition reactions,

(c) (A) and (B) is elimination, (C) are addition reactions

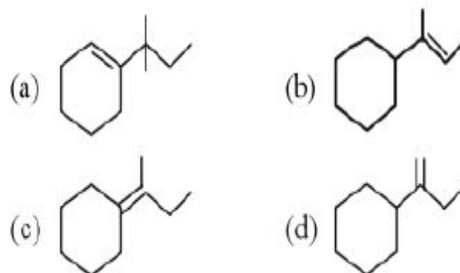
(d) (A) is elimination, (B) is substitution and (C) is addition reactions.

7. Which of the following statements is not correct for a nucleophile?

- (a) Ammonia is a nucleophile.
- (b) Nucleophiles attack low e^- density sites.
- (c) Nucleophiles are not electron seeking.
- (d) Nucleophile is a Lewis acid.

8. Which of the following is not the

product of Dehydration of

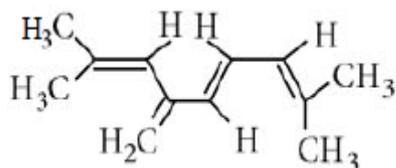


9. Treatment of cyclopentanone

with methyllithium gives which of the following species?

- (a) Cyclopentanonyl radical
- (b) Cyclopentanonyl biradical
- (c) Cyclopentanonyl anion
- (d) Cyclopentanonyl cation

10. The total number of π bond electrons in the following structure is

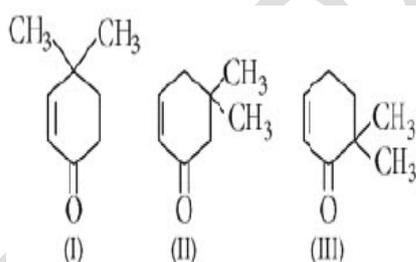


- (a) 12
- (b) 16
- (c) 4
- (d) 8

11. Which of the following species contains equal number of σ and π bonds?

- (a) $(\text{CN})_2$
- (b) $\text{CH}_2(\text{CN})_2$
- (c) HCO_3^-
- (d) XeO_3

12. Given

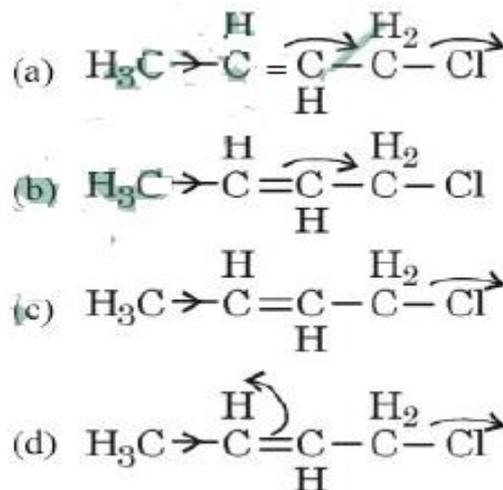


Which of the given compounds can exhibit tautomerism?

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

13. Which of the following is the most correct electron displacement for a nucleophilic

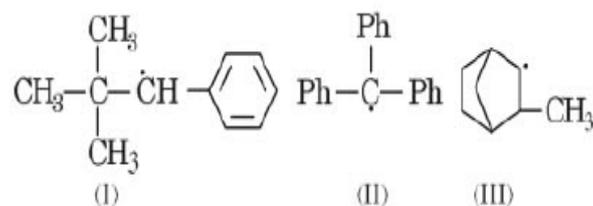
reaction to take place?



14. In Duma's method for estimation of nitrogen, 0.25g of an organic compound gave 40 mL of nitrogen collected at 300 K temperature and 725 mm pressure. If the aqueous tension at 300 K is 25 mm, the percentage of nitrogen in the compound is

- (a) 16.76
- (b) 15.76
- (c) 17.36
- (d) 18.20

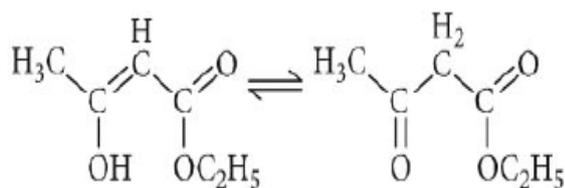
15. Consider the following compounds



Hyperconjugation occurs in

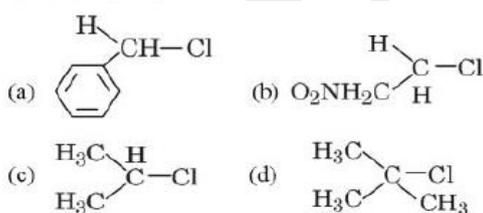
- (a) III only
- (b) I and III
- (c) I only
- (d) II only

16. The enolic form of ethyl acetoacetate as shown below has



- (a) 9 sigma bonds and 2 pi-bonds
- (b) 9 sigma bonds and 1 pi-bond
- (c) 1 sigma bonds and 2 pi-bonds
- (d) 16 sigma bonds and 1 pi-bond

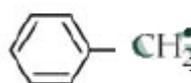
17. In which of the following compounds, the C-Cl bond ionisation shall give most stable carbonium ion?



18. In the Kjeldahl's method for estimation of nitrogen present in a soil sample. Ammonia evolved from 0.75 g of sample neutralized 10mL of 1 M H_2SO_4 . The percentage nitrogen in the soil is

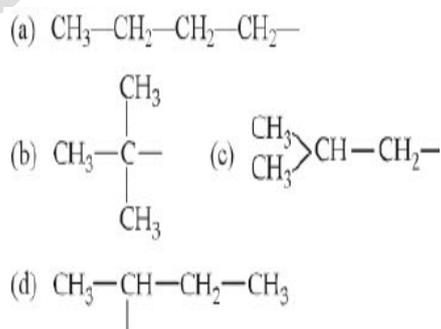
- (a) 37.33
- (b) 45.33

- (c) 35.33
- (d) 43.33

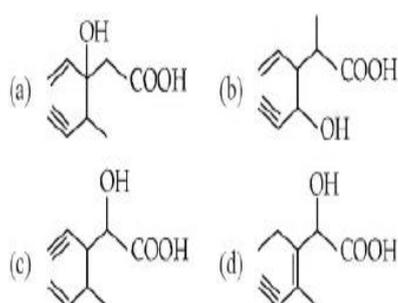
19. The radical,  is aromatic because it has

- (a) 7p-orbitals -and 7 unpaired electrons
- (b) 6p-orbitals -and 7 unpaired electrons
- (c) 6p-orbitals -and 6 unpaired electrons
- (d) 7p-orbitals -and 6 unpaired electrons

20. The structure of isobutyl group in an organic compound is



21. Structure of the compound whose IUPAC name is 3-Ethyl-2-hydroxy-4-methylhex-3-en-5-ynoic acid is



22. Some meta-directing substituents in aromatic substitution are given. Which one is most deactivating?

- (a) $-\text{COOH}$
 (b) $-\text{NO}_2$
 (c) $-\text{C} \equiv \text{N}$
 (d) $-\text{SO}_3\text{H}$

23. Arrange the following in increasing order of stability

1. $(\text{CH}_3)_2-\text{C}^+-\text{CH}_2-\text{CH}_3$
2. $(\text{CH}_3)_3-\text{C}^+$
3. $(\text{CH}_3)_2-\text{C}^+\text{H}$
4. CH_3-CH_2
5. CH_3

- (a) $5 < 4 < 3 < 1 < 2$
 (b) $4 < 5 < 3 < 1 < 2$
 (c) $1 < 5 < 4 < 3 < 2$
 (d) $5 < 4 < 3 < 2 < 1$

24. What is the hybridisation state of benzyl carbonium ion

- (a) Sp^2
 (b) Sd^2
 (c) Sp^2d
 (d) Sp^3

25. Nitrogen detection in an organic compound is carried out by Lassaigne's

test. The blue colour formed corresponds to which of the following formulae?

- (a) $\text{Fe}_3[\text{Fe}(\text{CN}_6)]_2$
 (b) $\text{Fe}_4[\text{Fe}(\text{CN}_6)]_3$
 (c) $\text{Fe}_4[\text{Fe}(\text{CN}_6)]_2$
 (d) $\text{Fe}_3[\text{Fe}(\text{CN}_6)]_3$

26. Homolytic fission of the following alkanes forms free radicals $\text{C}_6\text{H}_5-\dot{\text{C}}\text{H}_2$?

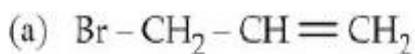
- CH_3-CH_3 ,
 $\text{CH}_3-\text{CH}_2-\text{CH}_3$,
 $(\text{CH}_3)_2\text{CH}-\text{CH}_3$,
 $\text{CH}_3-\text{CH}_2-\text{CH}(\text{CH}_3)_2$, increasing order of stability of the radicals is

- (a) $(\text{CH}_3)_2\dot{\text{C}}-\text{CH}_2\text{CH}_3 < \text{CH}_3-\dot{\text{C}}\text{H}-\text{CH}_3 < \text{CH}_3-\dot{\text{C}}\text{H}_2 < (\text{CH}_3)_3\dot{\text{C}}$
 (b) $\text{CH}_3-\dot{\text{C}}\text{H}_2 < \text{CH}_3-\dot{\text{C}}\text{H}-\text{CH}_3 < (\text{CH}_3)_2\dot{\text{C}}-\text{CH}_2-\text{CH}_3 < (\text{CH}_3)_3\dot{\text{C}}$
 (c) $\text{CH}_3-\dot{\text{C}}\text{H}_2 < \text{CH}_3-\dot{\text{C}}\text{H}-\text{CH}_3 < (\text{CH}_3)_3\dot{\text{C}} < (\text{CH}_3)_2\dot{\text{C}}-\text{CH}_2\text{CH}_3$
 (d) $(\text{CH}_3)_3\dot{\text{C}} < (\text{CH}_3)_2\dot{\text{C}}-\text{CH}_2\text{CH}_3 < \text{CH}_3-\dot{\text{C}}\text{H}-\text{CH}_3 < \text{CH}_3-\dot{\text{C}}\text{H}_2$

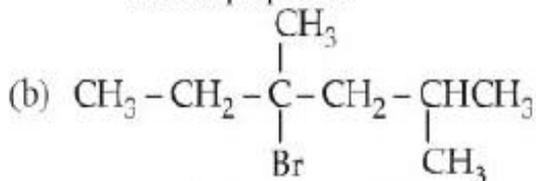
27. Among the following compounds the one that is most reactive towards electrophilic nitration is

- (a) benzoic acid
 (b) nitrobenzene
 (c) toluene
 (d) benzene

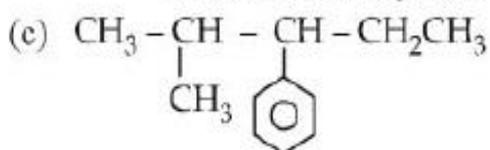
28. Which nomenclature is not according to IUPAC system?



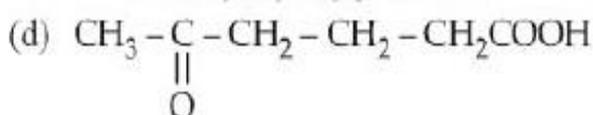
1-Bromoprop-2-ene



4-Bromo-2,4-dimethylhexane

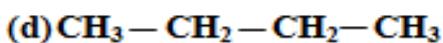
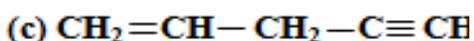
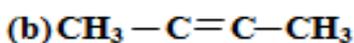
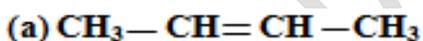


2-Methyl-3-phenylpentane

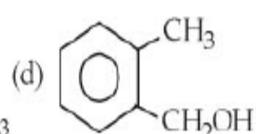
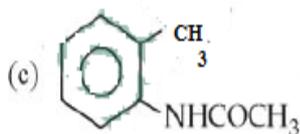
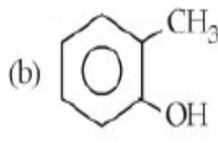
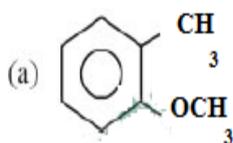


5-oxohexanoic acid

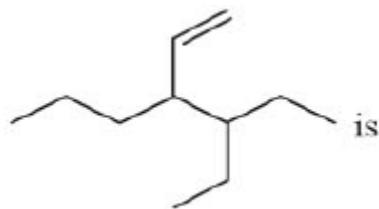
29. Considering the state of hybridization of carbon atoms, find out the molecule among the following which is linear?



30. Which one of the following is most reactive towards electrophilic reagent?



31. The correct IUPAC name for the compound



(a) 4-ethyl-3-propylhex-1-ene

(b) 3-ethyl-4-ethenylheptane

(c) 3-ethyl-4-propylhex-5-ene

(d) 3-(1-ethylpropyl)hex-1-ene

32. In Dumas' method of estimation of nitrogen 0.35 g of an organic compound gave 55 mL of nitrogen collected at 300 K temperature and 715 mm pressure. The percentage composition of nitrogen in the compound would be (aqueous tension at 300 K = 15 mm).

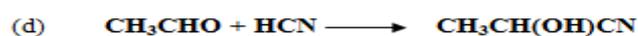
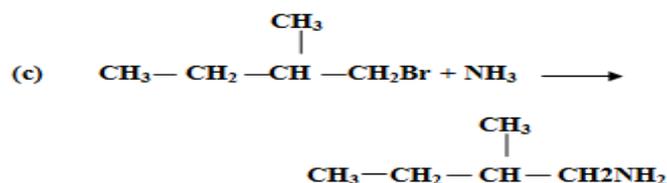
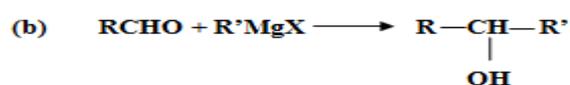
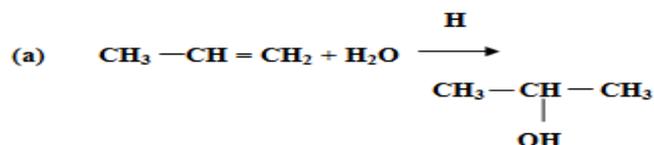
(a) 15.45

(b) 16.45

(c) 17.45

(d) 14.45

33. Which one is a nucleophilic substitution reaction among the following?

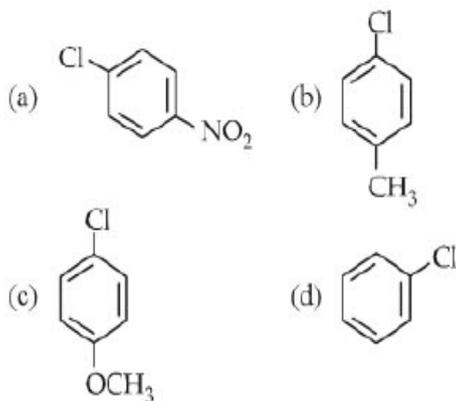


34. The Lassaigne's extract is boiled with cone. HNO_3 while testing for halogens.

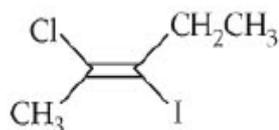
By doing so it

- (a) Decomposes Na_2S and NaCN , formed
- (b) (h) helps in the precipitation of AgCl
- (c) (0 increases the solubility product of AgCl
- (d) increases the concentration of NO_3^- ions

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



36. The IUPAC name of the following compound



- (a) trans -2 -chloro-3-iodo-2-pentene
- (b) cis-3-iodo-4-chloro-3-pentane
- (c) trans-3 -iodo-4 -chloro -3 -pentene

(d) Cis-2-chloro-3-iodo-2-pentene.

37. Which of the following species is not electrophilic in nature?



38. The IUPAC name of the compound $\text{CH}_3\text{CH}=\text{CHC}\equiv\text{CH}$ is

- (a) pent-4-yn-2-ene
- (b) pent-3-en-1-yne
- (c) pent-2-en-2-yne
- (d) pent-1-yn-3-ene

39. The IUPAC name of the compound having the formula

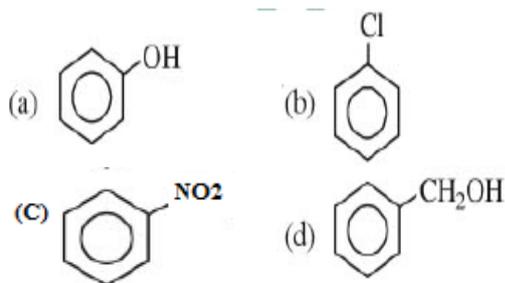


- (a) 1-butyne-3-ene
- (b) but-1-yne-3-ene
- (c) 1-butene-3-yne
- (d) 3-butene-1-yne

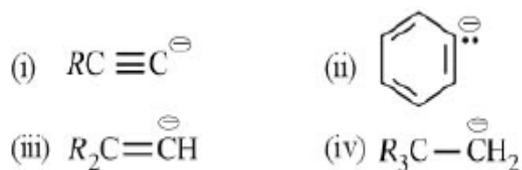
40. Base strength of $\text{H}_3\text{C}\overset{\ominus}{\text{C}}\text{H}_2$, $\text{H}_2\text{C}=\overset{\ominus}{\text{C}}\text{H}$ and $\text{H}-\overset{\ominus}{\text{C}}\equiv\text{C}$ is in the order of

- (a) i>iii>ii
- (b) i>ii>iii
- (c) ii>i>iii
- (d) iii>ii>i

41. Which one of the following is most reactive towards electrophilic attack

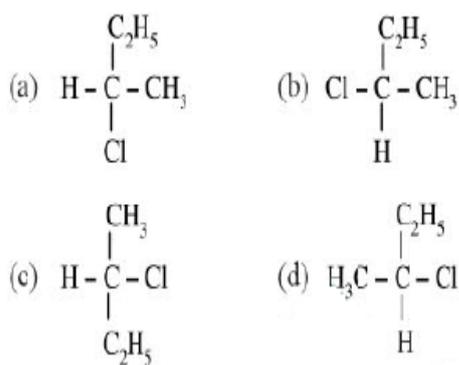


42. The stability of carbanions in the following is in the order of



- (a) iv>ii>iii>i
 (b) i>iii>ii>iv
 (c) i>ii>iii>iv
 (d) ii>iii>iv>i

43. $CH_3 - CHCl - CH_2 - CH_3$ has a chiral centre which one of the following represents its R-configuration?



44. For (i) I^- , (ii) Cl^- , (iii) Br^- , the increasing order of nucleophilicity would be

- (a) $Cl^- < Br^- < I^-$
 (b) $I^- < Cl^- < Br^-$
 (c) $Br^- < Cl^- < I^-$

(d) $I^- < Br^- < Cl^-$

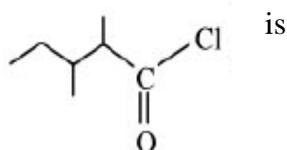
45. The Order of decreasing reactivity towards an electrophilic reagent, for the following would be

- (i) benzene
 (ii) toluene
 (iii) chlorobenzene
 (iv) phenol
 (a) (ii) > (iv) > (i) > (iii)
 (b) (iv) > (iii) > (ii) > (i)
 (c) (iv) > (ii) > (i) > (iii)
 (d) (i) > (ii) > (iii) > (iv)

46. The general molecular formula, which represents the homologous series of alkanols is

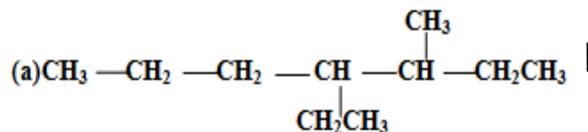
- (a) $C_nH_{2n}O$
 (b) $C_nH_{2n}O_2$
 (c) $C_nH_{2n+2}O$
 (d) $C_nH_{2n+1}O$

47. The IUPAC name of

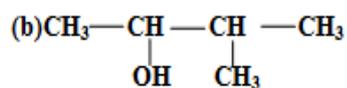


- (a) 1-chloro-1-oxo-2,3-dimethylpentane
 (b) 2-ethyl-3-methylbutanoyl chloride
 (c) 2,3-dimethylpentanoyl chloride
 (d) 3,4-dimethylpentanoyl chloride

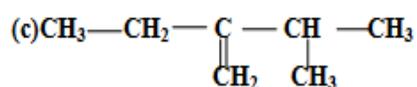
0 48. Names of some compounds are given. Which one is not in IUPAC system?



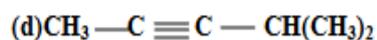
3-Methyl-4-ethylheptane



3-Methyl-2-butanol



2-ethyl-3-methylbut-1-ene

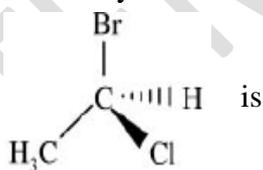


4-Methyl-2-pentyne

49. Which of the following undergoes nucleophilic substitution exclusively by $\text{S}_{\text{N}}1$ mechanism?

- (a) Ethyl chloride
- (b) Isopropyl chloride
- (c) Chlorobenzene
- (d) Benzyl chloride

50. The chirality of the compound



- (a) R
- (b) S
- (c) E
- (d) Z