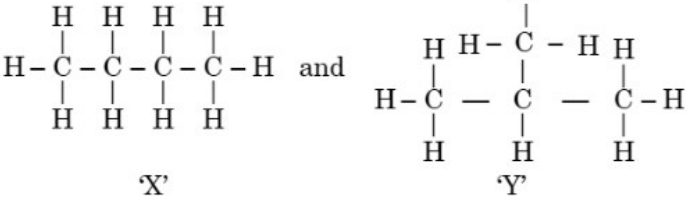
4. Carbon and its Compounds - Board Exam Questions (1 Mark)

Practice these questions online at pschool.in/science/ncert/g10/chap-4

1 Mark Questions (MCQ)

1) *The formula of functional group for aldehyde is:*
(a) –COOH (b) –CHO (c) –C(=O)– (d) –OH

2) *Consider the structures 'X' and 'Y' given below:*
Which of the following statements are correct?
(i) 'X' and 'Y' are homologues.
(ii) 'X' and 'Y' have the same structural formula, but different molecular formula.
(iii) 'X' and 'Y' have the same molecular formula, but different structural formula.
(iv) 'X' and 'Y' are structural isomers.



(a) (i) and (iii) (b) (i) and (iv) (c) (ii) and (iv) (d) (iii) and (iv)

3) *While washing dirty clothes by soap, micelles are formed. Select the correct statement about micelles.*
(a) The hydrophobic tail of the soap molecule is in the interior of the cluster, whereas hydrophilic end is on the surface of the cluster
(b) The hydrophobic tail is on the surface of the cluster, whereas hydrophilic end is in the interior of cluster
(c) Both hydrophobic tail and hydrophilic end are in the interior of the cluster

(d) Both hydrophobic tail and hydrophilic end are on the surface of the cluster

4) *Which of the following set of compounds does not belong to same homologous series?*

(a) CH_4 and C_4H_{10} (b) C_2H_6 and C_3H_8 (c) C_3H_8 and C_5H_{12} (d) C_4H_8 and C_5H_{12}

5) *Which of the following will not undergo addition reaction?*

(a) C_4H_8 (b) C_2H_2 (c) C_3H_8 (d) C_2H_4

6) *Manjeet wants to wash clothes, but the water available is hard. He compares the action of soap and detergent in hard water, to decide which one to use for washing his clothes. He observes:*

- Soap forms scum in hard water.

- Detergent produces lather easily in hard water.

Which of the following inferences is correct?

(a) Ca^{2+} and Mg^{2+} ions react with soap, forming insoluble compounds, whereas detergents do not form such insoluble salts

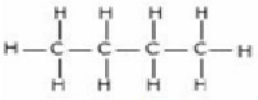
(b) Soap is acidic, and detergents are basic

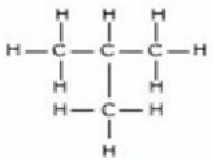
(c) Soap react with Na^+ ions in hard water to form scum while detergents do not react with Na^+ ions

(d) Detergents form lather easily because they are ionic compounds and react with Ca^{2+} and Mg^{2+} ions while soaps do not react with hard water

7) *Which of the following pair of compounds are isomers?*

(a)





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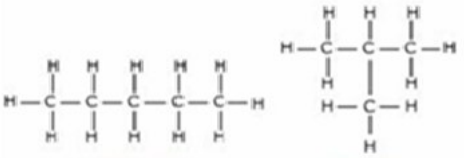

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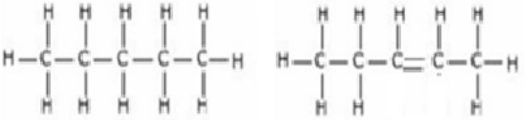

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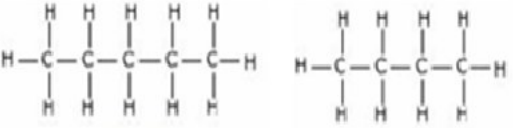
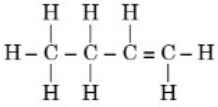


8) *The unsaturated hydrocarbon with three carbon atoms is:*
(a) propene (b) propane (c) pentane (d) pentene

9) *Given below are the structures of some hydrocarbons. Select the two structures which are related to each other from the given options:*

(i)



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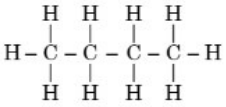

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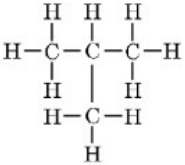

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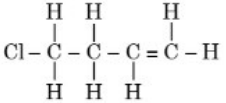


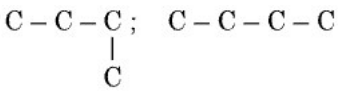
(a) (i) and (iv) (b) (ii) and (iv) (c) (ii) and (iii) (d) (i) and (iii)

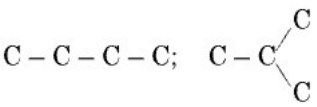
10) *Choose the incorrect statement about the common reaction used in hydrogenation of vegetable oils.*
(a) It is an addition reaction
(b) It takes place in the presence of nickel or palladium catalyst
(c) The product contains only single bonds between carbon atoms

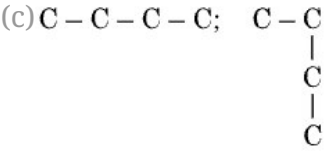
(d) It is an addition reaction which occurs in the presence of an acid catalyst

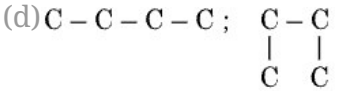
11) *Select from the following a hydrocarbon having one C–C bond and one C≡C bond:*
(a) Benzene (b) Cyclohexane (c) Butyne (d) Propyne

12) *If we make carbon skeleton with four carbon atoms, the two different possible skeletons will be*

(a) 

(b) 

(c) 

(d) 

13) *A Hydrocarbon which does not belong to the same homologous series of carbon compounds is*
(a) C_4H_{10} (b) C_6H_{14} (c) C_7H_{14} (d) $C_{10}H_{22}$

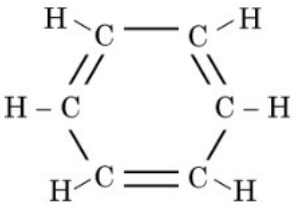
14) *Carbon compounds:*
(i) are good conductors of electricity.
(ii) are bad conductors of electricity.
(iii) have strong forces of attraction between their molecules.
(iv) have weak forces of attraction between their molecules.
The correct statements are:
(a) (i) and (ii) (b) (ii) and (iii) (c) (ii) and (iv) (d) (i) and (iii)

15) *Consider the following statements about homologous series of carbon compounds:*
(a) All succeeding members differ by –CH_2 unit.
(b) Melting point and boiling point increases with increasing molecular mass.

(c) The difference in molecular masses between two successive members is 16 u.
(d) C_2H_2 and C_3H_4 are NOT the successive members of alkyne series.
The correct statements are –
(a) (a) and (b) (b) (b) and (c) (c) (a) and (c) (d) (c) and (d)

16) *The structural formula of Cyclohexane is*

(a)



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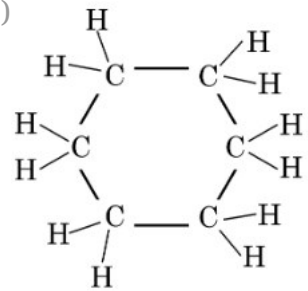

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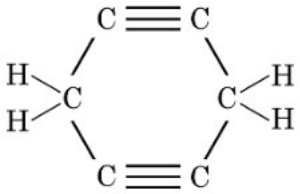

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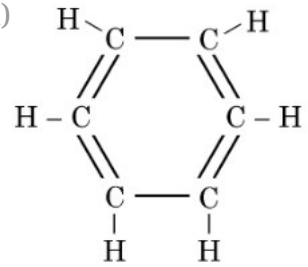
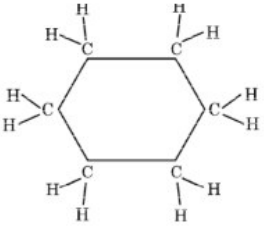
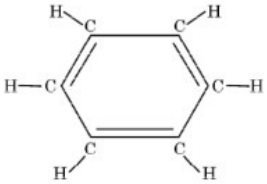


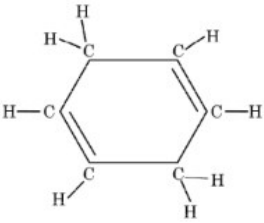
17) *Which one of the following hydrocarbons is different from the others?*
(a) C_4H_{10} (b) C_7H_{14} (c) C_5H_{12} (d) C_2H_6

18) *The number of single and double bonds present in a molecule of benzene (C_6H_6) respectively, are:*
(a) 6 and 6 (b) 9 and 3 (c) 3 and 9 (d) 3 and 3

19) *Consider the structures of the three cyclic carbon compounds A, B and C given below and select the correct option from the following:*

(A) 

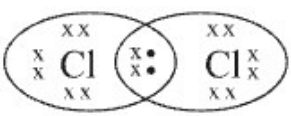
(B) 

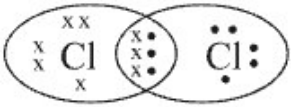
(C) 

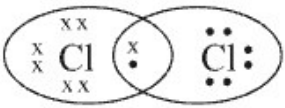
(a) A and C are isomers of hexane and B is benzene
(b) A is an isomer of hexane, B is benzene and C is an isomer of hexene
(c) A is a saturated cyclic hydrocarbon and B and C are unsaturated cyclic hydrocarbons
(d) A is cyclohexane and B and C are the isomers of benzene

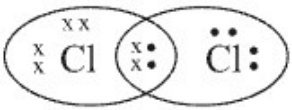
20) *The total number of electrons shared in the formation of an ethyne molecule is:*
(a) 6 (b) 3 (c) 10 (d) 4

21) *The electron dot structure of chlorine molecule is:*

(a) 

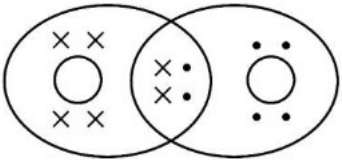
(b) 

(c) 

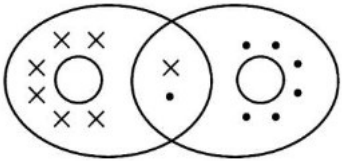
(d) 

22) *The correct representation of covalent bonding in an oxygen molecule is:*

(a)



(b)



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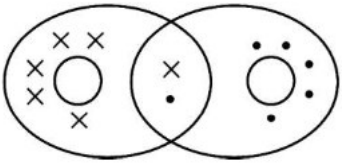

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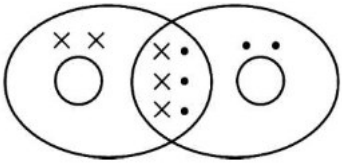
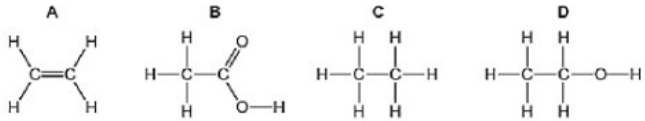


23) *The formulae of four organic compounds are shown below. Choose the correct option*



(a) A and B are unsaturated hydrocarbons
(b) C and D are saturated hydrocarbons
(c) Addition of hydrogen in presence of catalyst changes A to C
(d) Addition of potassium permanganate changes B to D

Assertion and Reason

1) *Assertion (A): Carbon shares its valence electrons with other atoms of carbon or with atoms of other elements.*
Reason (R): The shared electrons belong to the outermost shells of both the atoms and lead to both atoms attaining the noble gas configuration.

2) *Assertion (A): Carbon compounds can form chains, branched and ring structures.*
Reason (R): Carbon exhibits the property of catenation.

3) *Assertion (A): There are large number of compounds with many carbon atoms linked to each other.*
Reason (R): Carbon-Carbon bond is very strong and stable.

4) *Assertion (A): Pure ethanoic acid is also known as glacial acetic acid.*
Reason (R): Pure ethanoic acid often freezes during winter due to its low melting point of 290 K.

5) *Assertion (A): Carbon and its compounds are our major sources of fuels.*
Reason (R): Most of the carbon compounds on burning release a large amount of heat and light.

6) *Assertion (A): C_4H_8, C_4H_6 and C_4H_{10} are members of the same homologous series*
Reason (R): C_4H_8, C_4H_6, C_3H_4, C_3H_6, C_2H_4, C_2H_2 are unsaturated hydrocarbons.

7) *Assertion (A): Some vegetable oils are healthy.*
Reason (R): Vegetable oils generally have long unsaturated carbon chains.

8) *Assertion (A): Melting point and boiling point of ethanol are lower than that of sodium chloride.*
Reason (R): The forces of attraction between the molecules of ionic compounds are very strong.