SATLUJ PUBLIC SCHOOL

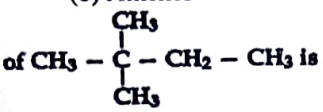
WEEKLY ASSESSMENT (21ST OCTOBER 2024)

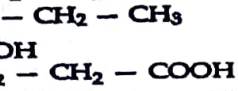
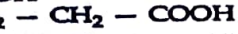
SCIENCE (X)

Time: 45 Minutes MM: 20

1. Which of the following statements are correct for carbon compounds?
(i) Most carbon compounds are good conductors of electricity.
(ii) Most carbon compounds are poor conductors of electricity.
(iii) Force of attraction between molecules of carbon compounds is not very strong.
(iv) Force of attraction between molecules of carbon compounds is very strong.
(a) (ii) and (iv) (b) (ii) and (iii) (c) (i) and (iv) (d) (i) and (iii)

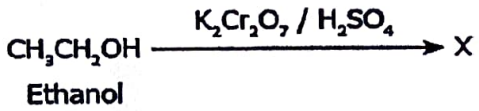
2. C_3H_8 belongs to the homologous series of
(a) Alkynes (b) Alkenes (c) Alkanes (d) Cyclo alkanes

3. The IUPAC name of  is
(a) 2-ethyl-2-methyl propane (b) 2, 2-dimethyl butane
(c) 1,1,1-trimethyl propane (d) 2, 2-methyl butane

4. Which of the following is the formula of Butanoic acid?
(a) $CH_3CH_2CH_2CH_2COOH$
(b) $COOH-CH_2-CH_2-CH_2-CH_3$
(c) 
(d) 

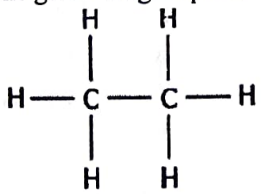
5. Which of the following will undergo addition reactions?
(a) CH_4 (b) C_3H_8 (c) C_2H_6 (d) C_2H_4

6. The below image represents a chemical reaction where ethanol is oxidised using potassium dichromate and sulphuric acid.



Which of the following option represents the product "X"?
(a) CH_2O (b) CH_3CH (c) CH_3H_2O (d) CH_3COOH

7. The given image represents the structure of a carbon compound known as ethane.



Which of the following option explains the naming of ethane?
(a) The presence of a functional group connected with a single bond
(b) As it contains two carbon atoms, and a single bond connects the carbon atoms
(c) Carbon compound with a total number of eight atoms is named ethane
(d) As it contains six hydrogen atoms, and a single bond connects the carbon and hydrogen atom

8. Assertion(A): n-butane and iso-butane are examples of isomers.
Reason (R): Isomerism is possible only with hydrocarbons having 4 or more carbon atoms.
(a) Both (A) and (R) are true and (R) is the correct explanation of the assertion (A).
(b) Both (A) and (R) are true, but (R) is not the correct explanation of the assertion (A).
(c) (A) is true, but (R) is false.
(d) (A) is false, but (R) is true.

9. Assertion (A): Carbon monoxide is extremely poisonous in nature.
Reason (R): Carbon monoxide is formed by complete combustion of carbon.
(a) Both (A) and (R) are true and (R) is the correct explanation of the assertion (A).
(b) Both (A) and (R) are true, but (R) is not the correct explanation of the assertion (A).
(c) (A) is true, but (R) is false.
(d) (A) is false, but (R) is true.

10. Assertion (A): Ethanoic acid is also known as glacial acetic acid.
Reason (R): The melting point of pure ethanoic acid is 290 K and hence it often freezes during winters in cold climates.
(a) Both (A) and (R) are true and (R) is the correct explanation of the assertion (A).
(b) Both (A) and (R) are true, but (R) is not the correct explanation of the assertion (A).
(c) (A) is true, but (R) is false.
(d) (A) is false, but (R) is true.

11. Write chemical equation of the reaction of ethanoic acid with the following:
(a) Sodium;
(b) Sodium hydroxide;

12. (a) Write the formula and draw the electron dot structure of carbon tetrachloride.
(b) Write the name and structure of an alcohol with four carbon atoms in its molecule.

13. Write one chemical equation to represent each of the following types of reactions of organic substances:
(i) Esterification
(ii) Saponification

14. State the reason why carbon can neither form C^{4+} cations nor C^{4-} anions, but forms covalent bonds. Also state reasons to explain why covalent compounds are bad conductors of electricity

15. What happens when (write chemical equation in each case)
(a) ethanol is burnt in air?
(b) ethanol with sodium