Q1) The electronic configuration of an element is found to be 2, 4. How many bonds can one carbon atom form in a compound?

(a) 1

(b) 2

(c) 4

(d) 6

Correct Answer: Option (c)

Q2) The following chemical reaction shows the addition of chlorine to methane in the presence of sunlight:

$CH_4 + Cl_4 \rightarrow X$

What is likely to be the product of the reaction represented by "X"?

(a) $CH_4 + H_2SO_4$

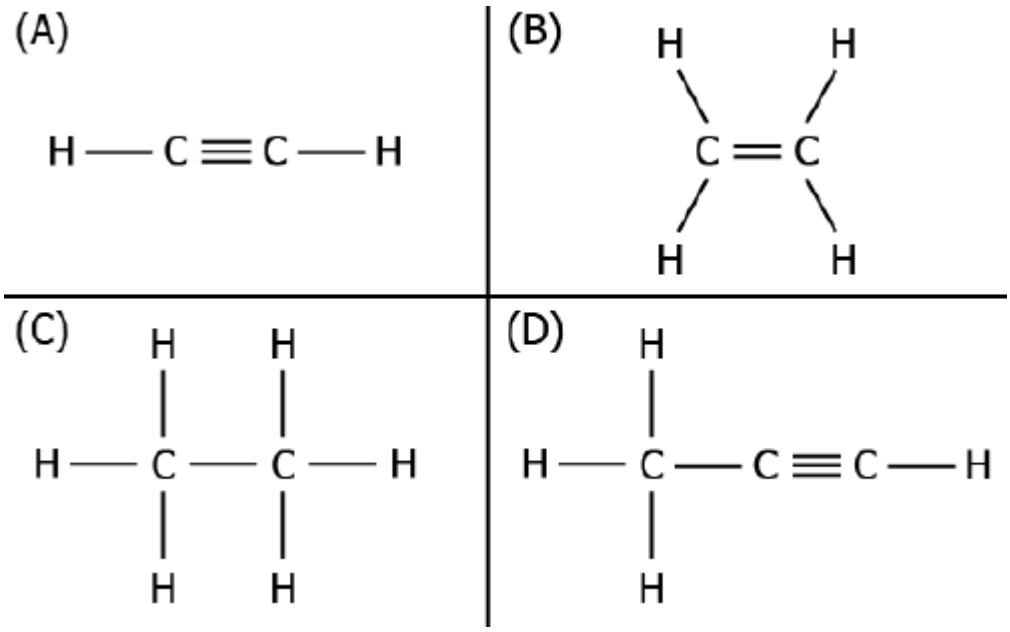
(b) $CH_3Cl + HCl$

(c) $CHCl_3 + HCl$

(d) $CH_3Cl + H_2SO_4$

Correct Answer: Option (b)

Q3) The image represents the structure of a few hydrocarbon compounds.



Which of these compounds can be classified as alkynes?

(a) Only (A)

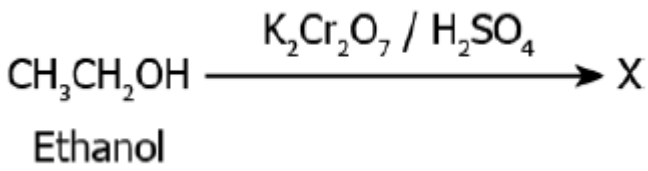
(b) Only (B)

(c) Both (A) and (D)

(d) Both (B) and (C)

Correct Answer: Option (c)

Q4) 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

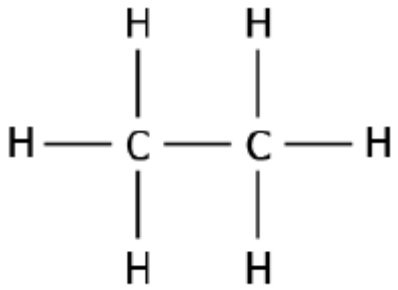
(b) CH_3CH

(c) CH_3H_2O

(d) CH_3COOH

Correct Answer: Option (d)

Q5) 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

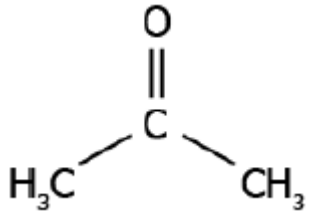
(b) As it contains two carbon atoms, and a single bond connects the carbon atoms

(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

Correct Answer: Option (b)

Q6) The following image represents a carbon compound.



Which functional group is present in the compound?

(a) Alcohol

(b) Aldehyde

(c) Carboxylic acid

(d) Ketone

Correct Answer: Option (d)

Q7) A carbon compound contains two atoms of carbon. Which name should the carbon compound bear?

(a) Butane

(b) Ethane

(c) Methane

(d) Propane

Correct Answer: Option (b)

Q8) The following chemical reaction shows the addition of chlorine gas to hydrocarbon in the presence of sunlight.

$CHCl_3 + Cl_2 \rightarrow CCl_4 + HCl$

How does chlorine react to a hydrocarbon compound in the presence of sunlight?

(a) It adds hydrogen to the compound

(b) It adds an oxygen atom to the compound

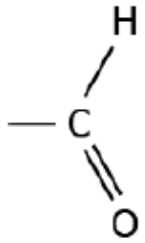
(c) It substitutes hydrogen atom from the compound

(d) It breaks double and triple bonds into a single bond

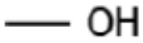
Correct Answer: Option (c)

Q9) Which of these functional groups can combine with carbon to produce alcohol?

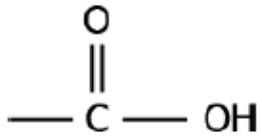
(a)



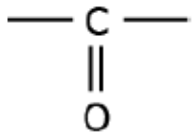
(b)



(c)



(d)



Correct Answer: Option (b)

Q10) A student studies that vinegar, which is a diluted form of ethanoic acid, freezes during winter. What does this suggest about the physical properties of pure ethanoic acid?

(a) It has a low boiling point

(b) It has a low melting point

(c) It has a very high boiling point

(d) It has a very high melting point

Correct Answer: Option (b)

Q11) Which of the following is the molecular formula of cyclobutane?

a) C_4H_{10}

b) C_4H_6

c) C_4H_8

d) C_4H_4

Correct Answer: Option (c)

Q12) A student studies that a soap molecule has two ends, one of which is an ionic end, and the other is the carbonic chain. Which option explains the interaction of a soap molecule with oil?

(a) Ionic end of the soap interacts with the oil

(b) The closest end of the soap interacts with the oil

(c) Carbonic chain end of the soap interacts with the oil

(d) Ends of the soap randomly interact with the oil

Correct Answer: Option (c)

Q13) Methane, ethane and propane are said to form a homologous series because all are:

(a) Hydrocarbons

(b) Saturated compounds

(c) Aliphatic compounds

(d) Differ from each other by a CH_2 group

Correct Answer: Option (d)

Q14) Which of the following belongs to a homologous series of alkynes?

(a) C_6H_6

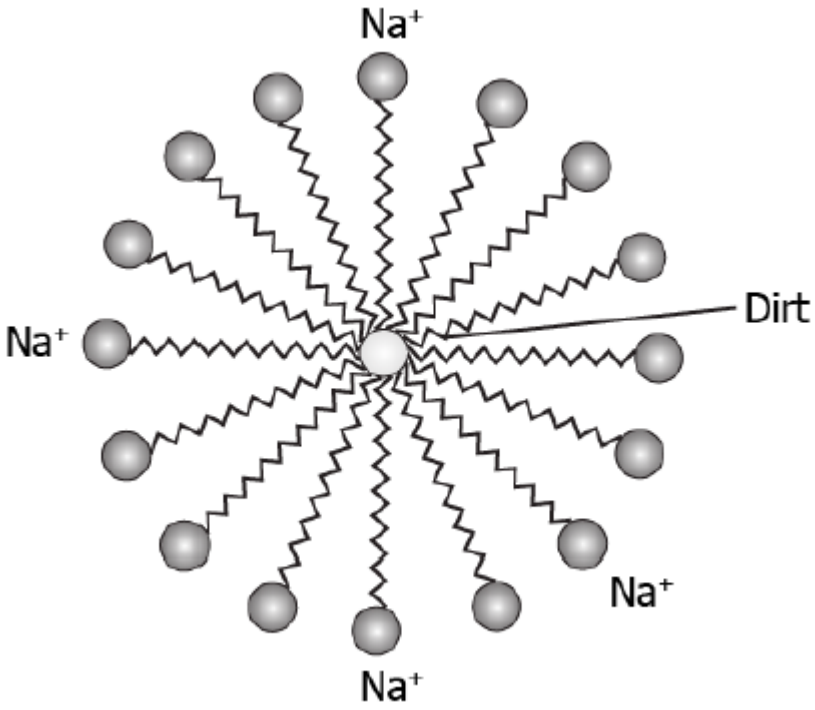
(b) C_2H_6

(c) C_2H_4

(d) C_3H_4

Correct Answer: Option (d)

Q15) A student studies that soap solution results in micelle formation, which helps to remove dirt. It has a unique orientation which helps in keeping the dirt out of the water, as shown in the image.



What helps the dirt to rise away?

(a) Suspension of the dirt in the micelles

(b) A collection of water molecules in the centre of the micelle

(c) The attraction between the ionic end and the dirt to remove it

(d) Mixing of the soap molecules along with the dirt to make it heavier

Correct Answer: Option (a)

Q16) Choose the correct statement.

(a) The ethene molecule is made up of 2 carbon atoms and 4 hydrogen atoms

(b) Each carbon atom shares three electrons with three hydrogen atoms to form three carbon-hydrogen single covalent bonds

(c) In ethane, the two carbon atoms share one pair of electrons among themselves to form one carbon-carbon single covalent bond

(d) All of the above

Correct Answer: Option (d)

Q17) Which of the following is the property of ionic compounds?

(a) They have high melting and boiling points

(b) They conduct electricity in solution or in a molten state

(c) Both (a) and (b)

(d) None of the above

Correct Answer: Option (c)

Q18) Which of the following is not a characteristic of fullerenes?

(a) Of all the fullerene, the C60 allotrope is the most stable

(b) Its shape is similar to that of a soccer ball

(c) It contains only fused six-membered carbon-carbon rings

(d) Its hardness is lower than that of a diamond

Correct Answer: Option (c)

Q19) How many single bonds are present in methane?

(a) Four

(b) Five

(c) Six

(d) Three

Correct Answer: Option (a)

Q20) A hydrocarbon should have a minimum of _____ carbon atoms to show isomerism.

(a) Three

(b) Four

(c) Fived

(d) Six

Correct Answer: Option (b)