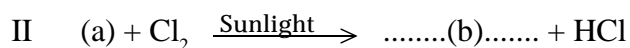
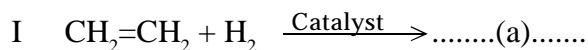


Concept : Substitution reactions, Addition reactions

1. Examine the equations given below and answer the questions.



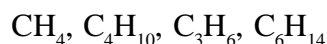
(i) What are a and b? (2)

(ii) Which type of chemical reactions do these belong to? (2)

Score (4) Time (5 minutes)

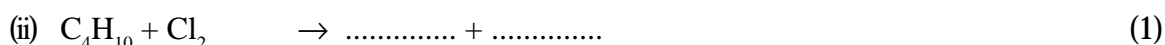
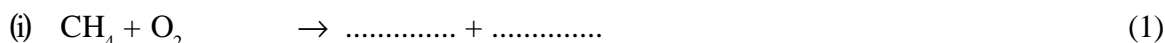
Concept : Addition reactions, Combustion, Substitution reactions

2. Given below are certain hydrocarbons



(a) Which among these can undergo addition reactions? (1)

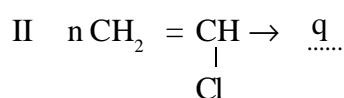
(b) Complete the following reactions



Score (3) Time (4 minutes)

Concept : Addition reactions - Polymerisation

- 3.



(a) What are p and q? (2)

(b) Which type of chemical reactions are these? (2)

Score (4) Time (5 minutes)

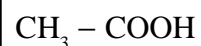
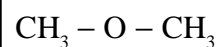
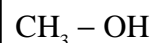
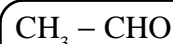
Concept : Esters

4. Examine the compounds given below and answer the questions.

(a) What are the chemicals required to prepare an ester?

(b) Represent the equation for this type of chemical reaction

(c) Give two uses of esters.



(1)

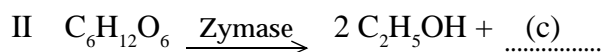
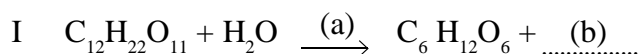
(1)

(1)

Score (3) Time (4 minutes)

Concept: Ethanol

5. Complete the equations given below and answer the questions.



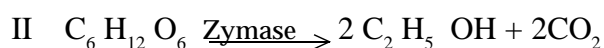
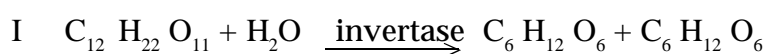
(i) What are a, b and c? (3)

(ii) Which industrially important product is produced as a result of the above reaction? (1)

Score (4) Time (5 minutes)

Concept : Ethanol

6. The equation for the preparation of 8 - 10 % alcohol is given



(a) What is the alcohol obtained by this reaction called? (1)

(b) How is it converted into rectified spirit? (1)

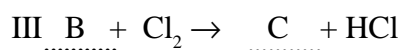
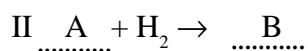
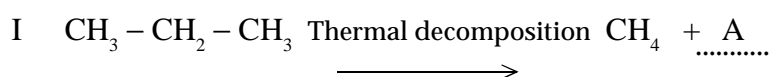
(c) What is meant by methylated spirit? (1)

(d) How is power alcohol prepared? (1)

Score (4) Time (5 minutes)

Concept : Thermal decomposition, Substitution reactions, Addition reactions

7. Examine the chemical reactions given below and answer the questions.



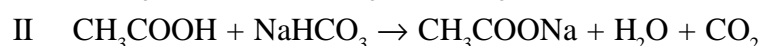
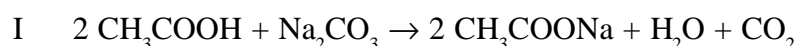
(a) What are A, B and C? (3)

(b) Write the names by which the chemical reactions II and III are known? (2)

Score (5) Time (6 minutes)

Concept : Ethanoic acid

8. Given below are the equations of two chemical reactions.



(a) Which among these compounds are known as washing soda and baking soda? (2)

(b) Which gas is being produced? Which device makes use of this chemical reaction? (2)

Score (4) Time (4 minutes)

Concept : Ester



- (a) What is the IUPAC name of the organic compound obtained by the chemical reaction given above? What is its common name? (2)
(b) What is the name for this type of reactions? (1)

Score (3) Time (4 minute)

Concept : Soaps - Detergents

10. Write the appropriate choices for those given in column A from column B.

A	B
Fatty Acid	Salt of sulphonic acid
Ester	Sodium stearate
Soap	Oleic acid
Detergents	Ethyl ethanoate

Score (2) Time (4 minute)

Concept : Soaps - Detergents

11. Identify the statements suitable for soaps and detergents from those given below.
(a) Salt of sulphonic acid
(b) Salt of fatty acids
(c) Does not lather in hard water
(d) Lathers well even in hard water

Score (2) Time (4 minute)

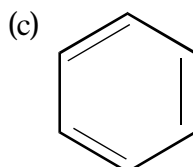
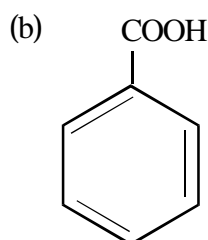
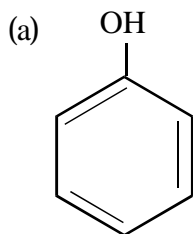
Concept : Soaps - Detergents

12. Set up an experiment to test the hardness of a water sample collected by a student.

Score (2) Time (4 minute)

Concept : Ring compounds

13. The structural formulae of some aromatic compounds are given below. Identify each from those given in the box.

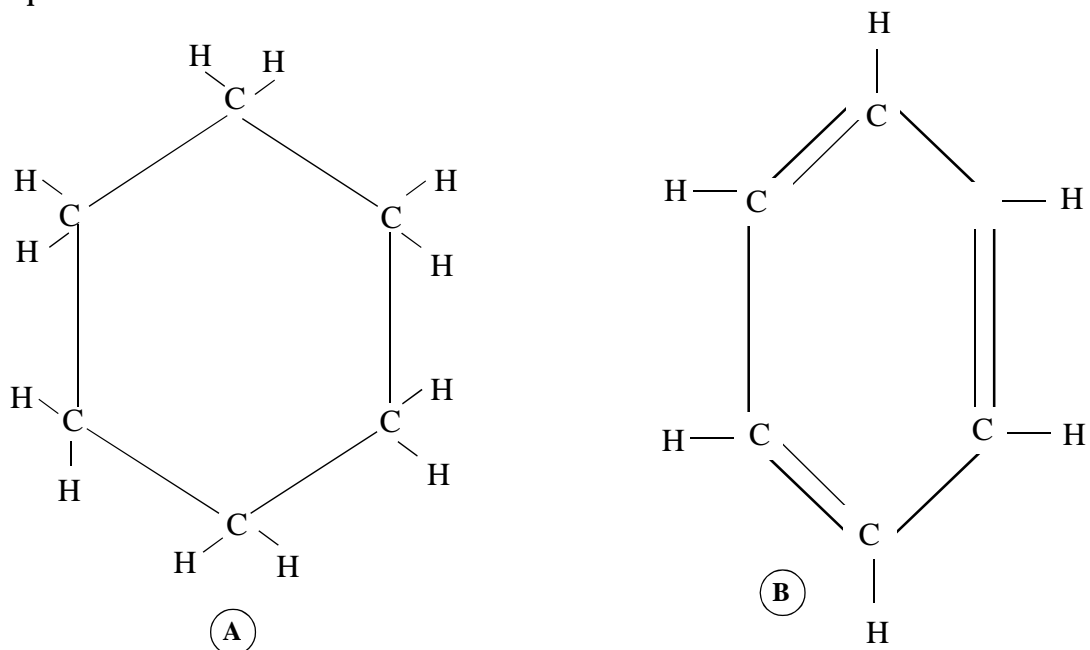


Phenol
Benzene
Nitrobenzene
Benzoic acid
Aniline

Score (3) Time (4 minute)

Concept : Alicyclic compounds, Aromatic compounds

14. The structural formulae of two organic compounds are given. Examine them and answer the questions.

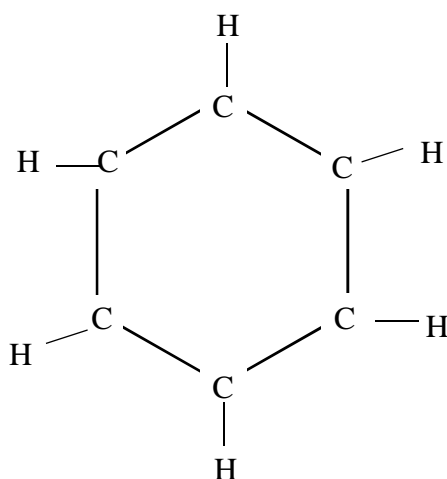


- (a) Write the molecular formula of A and B. (1)
(b) To which class does each of these compounds belong? (1)
(c) Give two differences in the structural formula of these compounds. (2)

Score (4) Time (5 minutes)

Concept : Aromatic compounds

15. The structure of benzene drawn by a student is given below. Draw the correct structure if it is wrongly drawn.

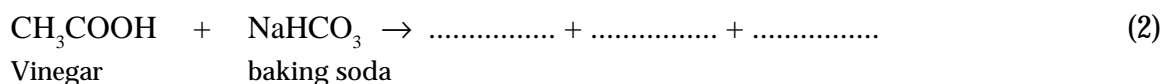


Score (2) Time (4 minutes)

Concept : Ethanoic acid

16. Note a simple experiment carried out in a science fair. A candle kept firm in a beaker was lighted. A little vinegar was taken in the beaker to which sodium bicarbonate was added. The candle stopped burning within a short time.

- (a) Which gas was responsible for making the candle stop burning? (1)
(b) Complete the equation for this reaction.



Score (3) Time (3 minute)

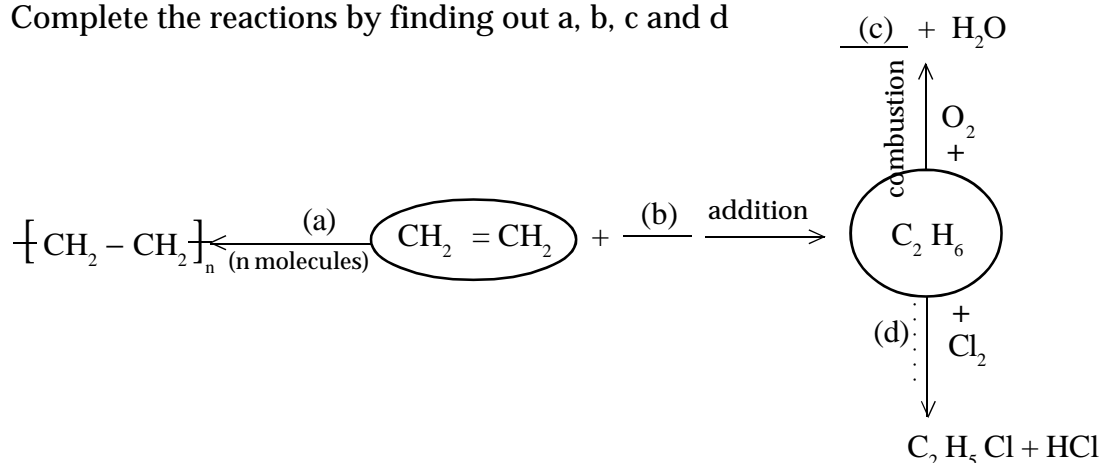
Concept : Esters

17. (a) Which organic acid and alcohol are required to prepare ethyl ethanoate? (1)
(b) Write the equation for this reaction. (1)

Score (2) Time (3 minute)

Concept : Organic compounds : Chemical reactions

18. Complete the reactions by finding out a, b, c and d



Score (4) Time (5 minute)

Concept : Various chemical reactions of organic compounds

19. Match the following suitably.

Reactants	Products	Name of the chemical reaction
a. $\text{CH}_4 + \text{Cl}_2$	$\text{CO}_2 + \text{H}_2\text{O}$	Addition reaction
b. $\text{C}_3\text{H}_8 + \text{O}_2$	$\text{C}_2\text{H}_4 + \text{CH}_4$	Substitution reactions
c. $\text{CH}_2=\text{CH}_2 + \text{H}_2$	$\text{CH}_3\text{Cl} + \text{HCl}$	Thermal decomposition
d. $\text{CH}_3 - \text{CH}_2 - \text{CH}_3 + \text{Heat}$	$\text{CH}_3 - \text{CH}_3$	Combustion

Score (4) Time (5 minute)

Concept : Various chemical reactions of organic compounds

20. Which among the following can undergo addition, substitution and thermal decomposition reactions?

(a) $\text{CH}_3 - \text{CH}_2 - \text{CH}_3$ (1)

(b) $\text{CH}_2 = \text{CH}_2$ (1)

(c) CH_4 (1)

Score (3) Time (3 minute)

Concept : Fermentation

21. You might have observed gas bubbles coming out from a mixture of sugar solution and yeast kept for two days.

(a) Which is the gas produced? (1)

(b) How is this reaction known? (1)

Score (2) Time (2 minute)

Concept : Structural formula of organic compounds, Addition reaction

22. The chemical formula of ethene is C_2H_4 .

(a) Write its structural formula. (1)

(b) Complete the equation for producing ethane from this compound

(i) $\text{C}_2\text{H}_4 + \dots \rightarrow \text{C}_2\text{H}_6$ (1)

(ii) Which type of chemical reaction is this? (1)

(iii) What happens to the bond between the carbon atoms? (1)

Score (4) Time (4 minute)

Concept : Addition reactions of organic compounds

23. $\text{CH} \equiv \text{CH} + \text{H}_2 \rightarrow \underline{\text{A}} + \text{H}_2 \rightarrow \underline{\text{B}}$

(a) Which type of chemical reaction is this? (1)

(b) What are A and B? (2)

Score (3) Time (3 minute)

Concept : Combustion

24. Combustion is the process by which a hydrocarbon burns in air. Complete the equations given below.

$\text{CH}_4 + 2\text{O}_2 \rightarrow \underline{\text{A}} + 2\text{H}_2\text{O}$

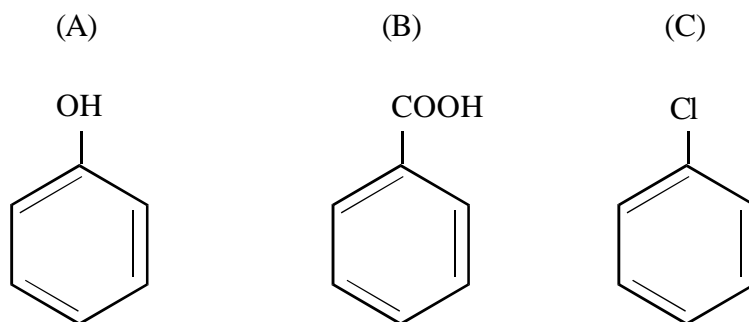
$\underline{\text{B}} + 5\text{O}_2 \rightarrow 3\text{CO}_2 + 4\text{H}_2\text{O}$

What are A and B?

Score (2) Time (2 minute)

Concept : Aromatic compounds

25. Examine the structural formula of the following compounds and answer the questions.



- (a) Write the functional groups present in the compounds A and B. (1)
- (b) Which aromatic compound is required to prepare compound C? (1)
- (c) Draw the structure of compound B by including the carbon and hydrogen atoms. (2)

Score (4) Time (5 minute)
