Topic 1: Carbon and its compounds
F.A-III
PAPER PEN TEST

TIME: 40 Min Max marks:40.

1. Name the compound form heating ethanol at 443 K with excess of conc.H_2SO_4. 1
2. What happened when a small piece of sodium is dropped into ethanol ? 1
3. Write the chemical equation for the decarboxylation of ethanoic acid? 1
4. Give an example of esterification reaction. 1
5. Name the product obtained when ethanol is oxidized by either chromic anhydride or alkaline potassium permanganate. 1
6. Write the chemical equation repressing the preparation reaction of ethanol from ethane. 1.

7. Name the 2 elements which are present both in CNG and Petroleum 2
8. Draw the electronic dot structure of ethane molecule (C_2H_6) 2
9. Write the IUPAC name of the next homologous of $CH_3OHCH_2CH_3$. 2
10. Define homologous series of organic compounds series of organic compounds ,Mention any two characteristics of homologous series. 2
11. Describe a chemical test to distinguish between ethanol and ethanoic acid. 2
12. Give the name of functional groups
(i)-CHO (ii) –C=0 2
13. Why does carbon form compounds mainly by covalent bonding ? 2
14. Give a chemical test to distinguish ethanol from ethanoic acid. 2
15 Allotropy is a property shown by which class: substances elements compounds or mixtures ? give one examples of allotropy. 2
16 . How may be the following be obtained from ethanol ? express giving chemical equations.
(i) Ethyl ethanoate (ii) Sodium ethoxide. 2

17. Describe with chemical equation how ethanoic acid may be obtained from.
(i) Ethanol (ii) Methanol 2
18. Explain the cleansing action of soap 3
19. Distinguish between esterification and saponification reactions of organic compounds 3.
20 Explain the structure of graphite in term of bonding and give one property based on this structure. 3
21 Name the organic acid present in vinegar .write a chemical equation which represents the commercial method for the preparation of this acid from methanol. 3

HIGH ORDER THINKING SKILLS (HOTS) QUESTIONS:

1. Why the colour of potassium permangante disappers,if it is added to warm solution of ethanol.

2. An organic compound with molecular formula $C_2H_4O_2$ produces brisk effervescence on addition of sodium carbonate /bicarbonate.

a .Identify the organic compound.
b. Name the gas evolved.

C. How will you test the gas evolved.
d. Write the chemical equation for the above reaction.
e. List two important uses of the above compound.

3.a.What are the various possible structure formulae of a compound having molecular formula C_3H_6O .
b. Also give the IUPAC names of the above possible compounds.
c.What is the similarity in these compounds?

4.A mixture of oxygen and ethyne is burnt for welding ,can you tell why a mixture of ethyne and air is not used .

5.Two carbon compound A and B have molecular formula C_3H_8 and C_3H_6 respectively. Which one of the two is most likely to show addition .justify your answer .Explain with the help of a chemical equation ,how an addition reaction is used in vegetable ghee industry.

6.1ml glacial acetic acid and 1ml of ethanol are mixed together in a test tube. Few drops of concentrated sulphuric acid is added in the mixture are warmed in a water bath for 5 min.
a.Name the resultant compound formed.
b.Represent the above change by a chemical equation .
c.What term is given to such a reaction.
d.What are the special characteristics of the compound formed.

7.An organic compound 'X'with a molecular formula C_2H_6O undergoes oxidation in the presence of alkaline $KMnO_4$ and forms the compound 'Y'.
a. Identify 'X' and 'Y'
B.Write your observation when the compound 'X' is made to react with compound 'Y' which is used as a preservative for pickles.

Topic 1:Carbon and its compounds
F.A-IV

QUIZ:
1.Name the simplest hydrocarbon..
2.What is the general formula of alkynes.?
3.Name the carboxylic acid used as preservation
4.Name the product other than water formed on burning of ethanol in air.
5 Give the IUPAC name of the following compounds.

i. An aldehyde derived from ethane.

ii. A ketone derived from butane.

iii. A chloride derived from propane.

iv. An alcohol derived from pentane.

M.C.Qs.
1. Dilute acetic acid was added to the four test tubes containing the following chemical.
i.KOH ii.$NaHCO_3$ iii. K_2CO_3 iv. NaCI

Brisk effervescence was observed in test tubes
a) i & ii b) ii & iii c) i& iv d) ii & iii
2. Which of the following solution of acetic acid in water can be used as vinegar used in pickles?
a) 5-10% b. 10-15% c.20-130% d.100%
3.The suffix used for naming an aldehyde is
a..ol b.al c.One d..ene
4.When acetic acid reacts with ethyl alcohol ,we add cons,H_2SO_4,its acts as…….and the process is called……..
a)Oxidizing agent, saponification. b). Dehydrating agent, esterification c). reducing agent ,esterification.d).Acid & esterification.

5.2ml of ethanoic acid was taken in each of the three test tubes.A,B and C,and 2ml.4ml and 8ml water was added to them ,respectively .A clear solution is obtained in:
a. Test tube A only.
b.Test tubes A & B only.
c.Test tubes B and C only.
d. All the test tubes.

6.2 ml pf acetic acid was added in drops to 5ml of water it was noticed that:
a.The acid formed a separate layer on the top of water.
b.Water formed a separate layer on the top of the acid.
c.A clear and homogenous solution was formed.
d.A pink and clear solution was formed.

7.A few drops of ethanoic acid was added to solid sodium carbonate .The observation made was that

a. A hissing sound was evolved
b. Brown fumes evolved.
c. Brisk effervescence occurred.
d. A pungent smelling gas evolved.

8.Acetic acid , when dissolved in water, it dissociates into ions reversibly because it is a :
A. Weak acid B. strong acid. C. weak base. D. strong base.

9.Which of the following hydrocarbon can show isomerism?
a.C_2H_4 b. C_2H_6 c.C_3H_8 d.C_4H_{10}
10.Combustion of hydrocarbon is generally accompanied by evolution of
a. Heat b. Light c. both heat and light d. Electric current.

PUZZLE :

1.Compounds containing double and triple bonds.
2.A compound which is basic constituent of many cough syrups.
3.Very dilute solution of ethanoic acid.
4.A sweet smelling substance formed by the reaction of alcohol and carboxylic acids.
5 Gas released when sodium metal is dropped in ethanol.

6.The functional group present in methanol.
7.IUPAC name of alkene containing 3 carbon atoms.
8.The number of single covalent compounds present in pentane.
9.First member of homologous serious alkyne.
10. Simplest ketone.
11.Self linking property of carbon.
12.Product formed by dehydration of ethanol in conc. Sulphuric acid.
13.Alcohol whose intake in small quantities can be lethal.
14.Number of single covalent bounds in ammonia.
15.Type of reactions shown by alkanes.

Activity :

1.To Study the saponification reaction for the preparation of soap in the laboratory using any vegetable oils.

2.Prepare soaps of different colours and fragrances.

CARBON AND ITS COMPOUNDS
3..Testing the hardness of water.
4..Collect information about artificial ripening of fruits by ethylene.

PROJECTS :

To prepare models of methane ,ethane,ethyne and benzene molecules using thermocols ,ball and match sticks.

TOPICS FOR DEBATE:

1.Role of esters in everyday life.

2. Condemning the use of alcohol as a social practice.

3.Use of biodegradable synthetic for cleansing purpose.

TOPIC 2: PERIODIC CLASSIFICATION OF ELEMENTS

Gist of the lesson:

Classification of elements:the arrangement of element in such manner that element with similar properties are grouped together while elements with dissimilar properties are separated .
Early attempt to classify elements:
DOBEREINER'S TRIADS:
He arranged the elements with similar properties in a group of three known as triad in such a manner that the atomic mass of the middle element was approximately the average of the other two elements
LIMITATIONS: