**ORGANIC CHEMISTRY REVISION QUESTIONS**

1. The compound with the molecular formula C10H22 can undergo the following reaction:

C10H22 → C8H18 + W

1. Name the process involved in this reaction.
2. To which hydrocarbon series does W belong?
3. Name gas W.
4. Write the equation for complete combustion of gas W.
5. Gas W was bubbled through

(i) Bromine.

(ii) Bromine water.

1. Write the equation for the reaction that took place in e(i) and (ii).
2. Name the product formed in e(i)
3. Two hydrocarbon compounds are represented by the molecular formulae, C3H6 and C3H8
4. To which hydrocarbon series does each of them belong?
5. Give the name of each compound.
6. Describe any chemical test that can be used to distinguish between the two compounds.
7. Which one of the compounds is unsaturated?
8. The unsaturated compounds named in (d) was reacted with hydrogen under certain conditions.

(i) State the conditions necessary for the reaction to take place.

(ii) Name the type of reaction.

(iii) State one industrial application of the type of reaction named in (ii).

1. Two hydrocarbon compounds, Q and Z, are represented by the molecular formula

C5H12 and C2H4 respectively.

1. Give the name of each hydrocarbon.
2. To which homologous series does each of them belong?
3. Which hydrocarbon contains multiple bonds?
4. Write the equation for complete combustion of Z.
5. Name the products of incomplete combustion of Z.
6. When ethanol reacts with concentrated sulphuric acid, a hydrocarbon T is formed.
7. Give the name of the hydrocarbon T.
8. To which homologous series does the hydrocarbon T belong?
9. State the conditions necessary for the reaction to take place.
10. Name the type of reaction that occurs.

5. State what is observed when methanol is added to acidified potassium dichromate and the mixture heated.

(b) Name the product formed.

6. Under certain conditions ethene undergoes a reaction that can be represented by the following equation.

nCH2 = CH2 → CH2 – CH2

1. Name the type of reaction.
2. Name the product of the reaction.
3. Give any one use of the product.
4. Explain one major environmental problem associated with the use of the product named in (b).

7. (a) Explain what is meant by polymerization.

(b) State one natural polymer formed by condensation polymerization and state its monomer.

8. The structure of a polymer is as shown below.

1. Write the structural formula for the monomer of the polymer.
2. Name the

(i) Monomer.

(ii) Polymer.

9. (a) In the manufacture of soap, oil or fat is heated with sodium hydroxide solution.

(i) Name the process of making soap.

(ii) What is the purpose of adding saturated sodium chloride solution?

(iii) State the chemical nature of soap.

(b) Sometimes when soap is used for washing clothes, a scum is formed.

(i) What is a scum?

(ii) What causes the formation of scum?

(iii) Give the genral name given to water which forms scum with soap.

(iv) Describe a chemical method by which the type of water you named in b(iii) can be treated to avoid formation of scum. Write equations for the reactions that are involved.

c (i) Name one soapless detergent that can be used instead of soap.

(ii) What is the advantage of using soapless detergents rather than soap?

(iii) What are the disadvantages of using soapless detergents?

10. (a) Crude ethanol is manufactured by the process known as fermentation.

(i) Explain what is meant by the term fermentation.

(ii) Write equation for the reaction that takes place during fermentation.

(b) Write equation to show how ethanol can be converted to ethene and indicate the conditions for the reaction.

(c) (i) State what would be observed when ethene is reacted with bromine

(ii) Write an equation for the reaction.

11 (a) explain what is meant by addition polymerization

(b) Name one synthetic polymer formed by addition polymerization and state two uses of the named polymer.

(c) State two natural polymers.

(d) State two advantages of natural polymers over synthetic polymers.

12 (a) State the differences between fats and oils. Give one example of each.

(b) Briefly describe how soap can be prepared.

(c) State what would be observed if soap solution was shaken with a solution containing magnesium hydrogen carbonate.

(d) Explain your answer in (c)

(e) State what would be observed if a solution of soapless detergent was used instead of soap solution.

13 The molecular mass of gas x is 28 and its empirical formula is CH2.

1. Determine the molecular formula of x.
2. write the
3. Structural formula of x
4. Equation for the reaction between x and bromine.
5. (i) Name one reagent that could be used to identify x.

(ii) State what would be observed if the reagent named in c(i) was reacted with x.

14 (a) Ethene can be prepared by reacting ethanol and sulphuric acid.

(i) State the conditions for the reaction.

(ii) Write the equation for the reaction.

(b) Explain what is meant by the term polymerization.

(c) Write an equation for the formation of polyethene from ethene.

(d) State two uses of polyethene.

15 Glucose, C6H12O6, can be converted to ethanol by a catalytic reaction caused by an enzyme produced from yeast.

1. Name the

(i) Reaction in which yeast converts glucose into alcohol.

(ii) Enzyme produced by yeast during the reaction.

1. Write the equation for the reaction that leads to the formation of ethanol.
2. Briefly describe how ethanol produced can be concentrated.

16 (a) (i) What is a polymer?

(ii) Distinguish between a natural and artificial polymer. In each case give two examples.

(b) Describe the process of vulcanization of rubber. In your description include:

(i) The importance of vulcanization of rubber industry.

(ii) Two useful items of vulcanized rubber.

17 . Ethanol can be converted to substances P and Q according to the reaction scheme shown below.

C2H5OH → C2H4 → C2H6

step1 P step 2 Q

1. Name substances P and Q.
2. write the structural formula of P
3. Name the reagent used in step 1.
4. State the products for complete combustion of Q in excess air.
5. Name the catalyst used in step 2.