

Grade 12 – CHM 71

Topic 5 (5.6 – 5.7) – Practice Questions – AK

❖ Subtopic 5.6 – Reactions of Organic Compounds

- The elimination of one hydrogen molecule from a molecule of ethane would form _____.
 ✓ A. ethene
 B. ethyne
 C. ethanol
 D. ethylether
 E. ethanoic acid
- Which of the following molecules would undergo addition reactions?
 I. Propane
 II. Propene
 III. Propyne
 A. I only
 B. II only
 C. III only
 D. I and II only
 ✓ E. II and III only
- The reaction of a molecule of propane, C_3H_8 , with one molecule of chlorine, Cl_2 , to produce chloropropane, C_3H_7Cl , is called _____ reaction.
 A. addition
 B. elimination
 ✓ C. substitution
 D. polymerization
 E. double displacement
- The elimination of one _____ molecule from a molecule of ethanol would form ethene.
 ✓ A. water
 B. oxygen
 C. ammonia
 D. hydrogen
 E. carbon dioxide
- A reaction in which a combination of atoms is removed from two adjacent carbon atoms to form an additional bond between them is called _____ reaction.
 A. addition
 ✓ B. elimination
 C. substitution
 D. halogenation
 E. hydrogenation
- When a molecule of propene, C_3H_6 , reacts with one molecule of chlorine, Cl_2 , to produce dichloropropane, $C_3H_6Cl_2$, this reaction is called _____.
 ✓ A. addition
 B. elimination
 C. substitution
 D. polymerization
 E. double displacement

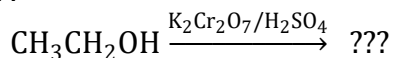
7. Chloropropane can be prepared from propane by a(n) _____ reaction.

- A. hydration
- B. elimination
- ✓ C. halogenation
- D. hydrogenation
- E. dehydrogenation

8. Which type of reaction is used to prepare 1,2-dichloropropane from propene?

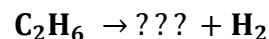
- A. Dehydrohalogenation
- B. Hydrogenation
- ✓ C. Halogenation
- D. Dehydration
- E. Hydration

9. What is/are the product(s) of the reaction below?



- A. Ethene only
 - B. Ethyl alcohol only
 - ✓ C. Ethene and water
 - D. Ethene and hydrogen
 - E. Ethane and hydrogen
-

• Use the organic reaction below to answer questions **10** and **11**.



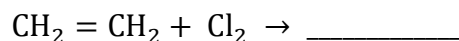
10. The correct product for the reaction above is _____.

- A. C_2H_2
- ✓ B. C_2H_4
- C. C_2H_8
- D. C_2H_9
- E. C_2H_{10}

11. Which of the following sets correctly describes the reaction above?

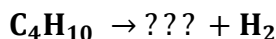
- A. Substitution hydration
 - B. Addition halogenation
 - C. Elimination dehydrohalogenation
 - D. Addition Hydration
 - ✓ E. Elimination Dehydrogenation
-

12. When ethene reacts with chlorine according to the reaction below the name of the product is called _____.



- A. dichloroethane
- B. dichloroethene
- C. 1,1-dichloroethane
- ✓ D. 1,2-dichloroethane
- E. 1,2-dichloroethene

- Use the organic reaction below to answer questions **13** and **14**.



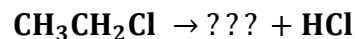
13. The missing product for the reaction above is ____.

- ✓ A. butane
 B. butyne
 C. ethene
 D. ethyne
 E. propene

14. Which of the following correctly describes the reaction above?

- A. Substitution Halogenation
 B. Addition Hydrogenation
 C. Elimination Dehydration
 D. Addition Hydration
 ✓ E. Elimination Dehydrogenation
-

- Use the organic reaction below to answer questions **15** and **16**.



15. The missing product for the reaction is ____.

- A. CH_3CH_2
 B. CH_3CHCl
 ✓ C. CH_2CH_2
 D. $\text{C}_2\text{H}_4\text{Cl}$
 E. C_2H_6

16. Which of the following correctly describes the reaction above?

- A. Substitution Halogenation
 B. Addition Hydrogenation
 ✓ C. Elimination Dehydrohalogenation
 D. Addition Hydration
 E. Elimination Dehydrogenation
-

17. Which of the following equations represents an **addition** reaction?

- I. $\text{CH}_3 - \text{CH} = \text{CH}_2 + \text{HCl} \rightarrow \text{CH}_3 - \text{CH}_2 - \text{CH}_2\text{Cl}$
 II. $\text{CH}_3 - \text{CH}_2 - \text{CH}_2\text{Cl} + \text{NaOH} \rightarrow \text{CH}_3 - \text{CH}_2 - \text{CH}_2\text{OH} + \text{NaCl}$
 III. $\text{CH}_3 - \text{CH}_2 - \text{CH}_2\text{Cl} + \text{NH}_3 \rightarrow \text{CH}_3 - \text{CH}_2 - \text{CH}_2\text{NH}_2 + \text{HCl}$

- ✓ A. I only
 B. II only
 C. III only
 D. I and II only
 E. I, II and III

18. Use your knowledge about organic reactions to answer questions **a** and **b**.

- a) For each of the reactions (**I – IV**), the names of one reactant and the desired product are given. Write the **type of the reaction (elimination, addition or substitution)** involved and the **name of the other reactant needed** to complete the reaction.

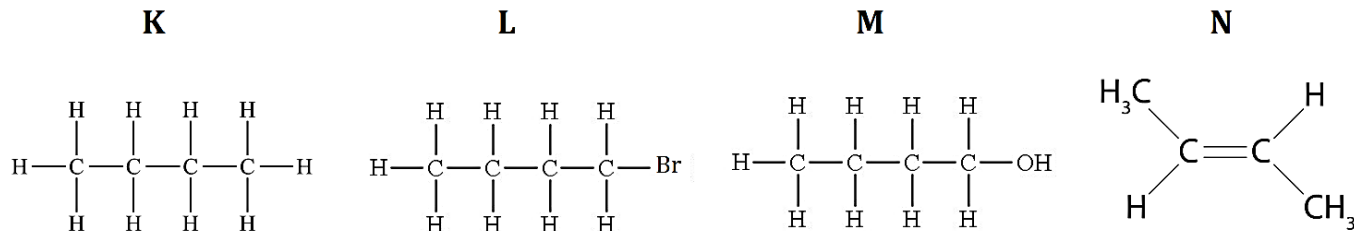
Reaction	Reactant	Desired product	Other reactant needed	Type of reaction
I	Butane	Chlorobutane	Chlorine	Substitution
II	Ethene	Chloroethane	Hydrogen chloride	Addition
III	Propene	Propanol	Water	Addition
IV	Bromobutane	Aminobutane	Ammonia	Substitution

- b) Write the **chemical formulae** of the **second product** obtained in reactions **I** and **IV**.

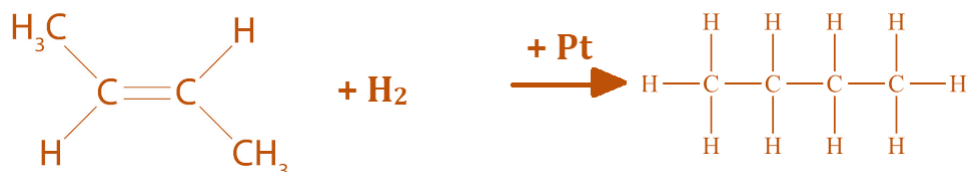
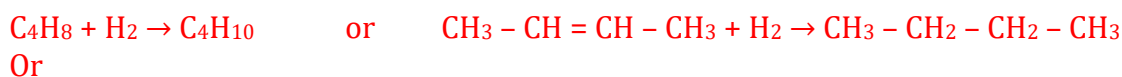
Reaction I: _____ HCl

Reaction IV: _____ HBr

19. Consider the following organic compounds (**K**, **L**, **M** and **N**) to answer questions **a – d**.



a) Compound **K** can be prepared from compound **N**. **Write** a chemical equation that shows this reaction and **identify** the type of reaction



This is an addition or hydrogenation reaction

b) Compound **L** reacted with sodium hydroxide solution, NaOH. **Write** the **chemical formula** and the **chemical name** of the two products.

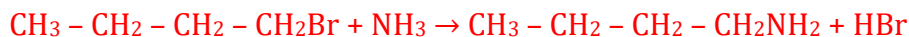
It leads to the formation of compound **M** or $\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2\text{OH}$ and NaBr
 Butanol and Sodium bromide

c) Which of the above compounds can undergo a dehydration reaction? Write the chemical equation taking place.

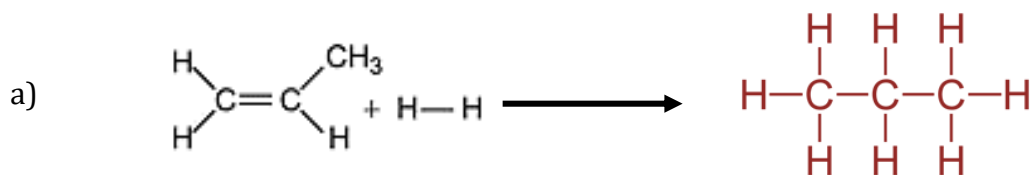
Compound **M**



d) Write an equation for the reaction taking place between compound **L** and ammonia.

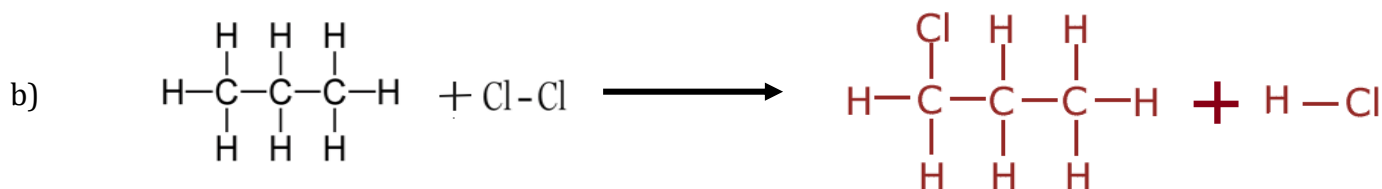


20. For each of the following reactions, **draw** the structural formula of the product(s) and identify the type of reaction (**elimination**, **substitution** or **addition**).



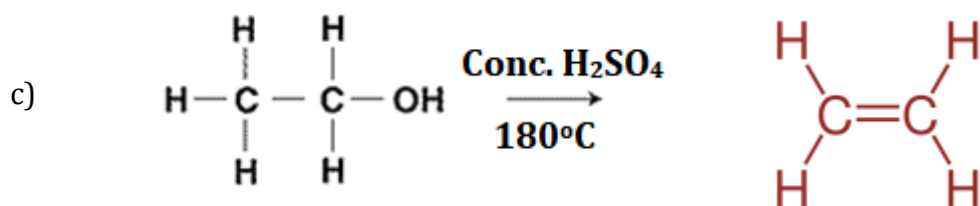
Type of reaction: _____

Addition / Hydrogenation



Type of reaction: _____

Substitution / Halogenation



Type of reaction: _____

Elimination / Dehydration

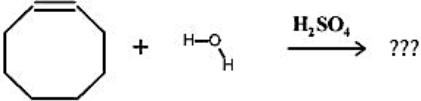
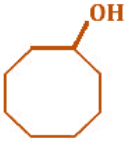
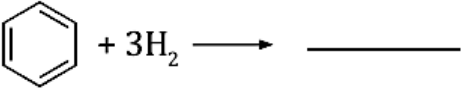

21. Write an equation to show how propene is prepared from propanol, then identify the type of reaction.



Type of reaction : Elimination/ dehydration

22. Use the table below to predict **the chemical formula of the missing product(s)** and identify the **type** of each of the following reactions.

	The Missing Product	Type of Reaction
a) $\text{C}_4\text{H}_8 + \text{H}_2 \rightarrow \underline{\hspace{2cm}}$	C_4H_{10}	Addition or Hydrogenation
b) $\text{C}_4\text{H}_{10} + \text{Br}_2 \rightarrow \underline{\hspace{2cm}} + \underline{\hspace{2cm}}$	$\text{C}_4\text{H}_9\text{Br} + \text{HBr}$	Substitution or Halogenation
c) $\text{C}_3\text{H}_6 + \text{HBr} \rightarrow \underline{\hspace{2cm}}$	$\text{C}_3\text{H}_7\text{Br}$	Addition or Hydrohalogenation
d) $\text{C}_4\text{H}_{10} \rightarrow \text{C}_4\text{H}_8 + \underline{\hspace{2cm}}$	H_2	Elimination Dehydrogenation
e) $\text{CH}_3\text{Br} + \text{NaOH} \rightarrow \underline{\hspace{2cm}}$	$\text{CH}_3\text{OH} + \text{NaBr}$	Substitution
f) $\text{CH}_3\text{CH}_2\text{Br} + \text{NH}_3 \rightarrow \underline{\hspace{2cm}} + \underline{\hspace{2cm}}$	$\text{CH}_3\text{CH}_2\text{NH}_2 + \text{HBr}$	Substitution
g) $\text{C}_5\text{H}_{12} + \text{I}_2 \rightarrow \underline{\hspace{2cm}} + \underline{\hspace{2cm}}$	$\text{C}_5\text{H}_{11}\text{I} + \text{HI}$	Substitution or Halogenation
h) $\text{C}_4\text{H}_8 + \text{HCl} \rightarrow \underline{\hspace{2cm}}$	$\text{C}_4\text{H}_9\text{Cl}$	Addition or Hydrohalogenation
i) $\text{C}_3\text{H}_6 + \text{H}_2 \rightarrow \underline{\hspace{2cm}}$	C_3H_8	Addition or Hydrogenation
j) $\text{C}_4\text{H}_8 + \text{Br}_2 \rightarrow \underline{\hspace{2cm}}$	$\text{C}_4\text{H}_8\text{Br}_2$	Addition or Halogenation
k) $\text{C}_3\text{H}_8 \rightarrow \text{C}_3\text{H}_6 + \underline{\hspace{2cm}}$	H_2	Elimination or Dehydrogenation
l) $\text{CH}_3\text{CH}_2\text{Cl} + \text{NaOH} \rightarrow \underline{\hspace{2cm}} + \underline{\hspace{2cm}}$	$\text{CH}_3\text{CH}_2\text{OH} + \text{NaCl}$	Substitution

<p>m)</p> 		<p style="color: red; text-align: center;">Addition or Hydration</p>
<p>n)</p> 		<p style="color: red; text-align: center;">Addition or hydrogenation</p>

❖ Subtopic 5.7 – Polymers

1. Which of the following is the correct formula of the monomer that polymerizes to form polyethylene?

- A. C_2H_6
- ✓ B. C_2H_4
- C. C_2H_2
- D. $C_2H_2Cl_2$
- E. $C_2H_4Cl_2$

2. Which of the following is/are a use of polyethylene?

- I. Shopping bags and bottles
- II. Glues and carpets
- III. Coffee cups

- ✓ A. I only
- B. II only
- C. III only
- D. I and II only
- E. II and III only

3. Polyesters are formed by the condensation of _____ and _____.

- ✓ A. dialcohol dicarboxylic acid
- B. dialcohol polyethylene
- C. dialcohol polypropylene
- D. diamine dicarboxylic acid
- E. diamide dicarboxylic acid

4. Which of the following is the **correct** formula of the monomer that polymerizes to form polyvinyl chloride, PVC?

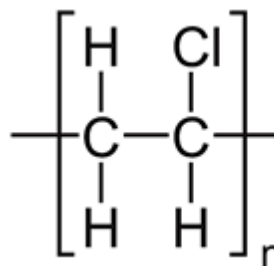
- A. C_2H_5Cl
- B. $C_2H_4Cl_2$
- C. $C_2H_2Cl_4$
- D. $C_2H_2Cl_2$
- ✓ E. C_2H_3Cl

5. Which of the following is/are use(s) of polystyrene?

- I. Shopping bags and bottles
- II. Glues and carpets
- III. Coffee cups

- A. I only
- B. II only
- ✓ C. III only
- D. I and II only
- E. II and III only

6. Which of the following polymers is represented below?



- A. Polystyrene, PS
- B. Polyethylene, PE
- C. Polypropylene, PP
- ✓ D. Polyvinylchloride, PVC
- E. Polytetrafluoroethene, PTFE

7. Which of the following polymers could be melted and molded repeatedly into shapes that are retained when they are cooled?

- I. Nylon
- II. Bakelite
- III. Polyethylene

- A. I only
- B. II only
- C. III only
- D. I and II only

✓ E. I and III only

8. Which of the following polymers **cannot** be remelted when cooled?

- I. Nylon
- II. Bakelite
- III. Polyethylene

- A. I only
- ✓ B. II only
- C. III only
- D. I and II only

E. I and III only

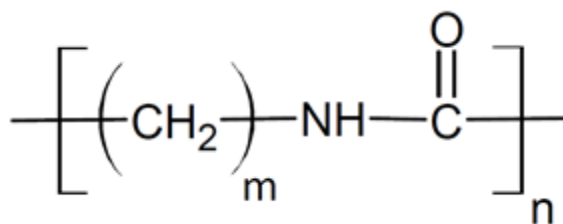
9. Polymers are widely used in a lot of products in daily life because they are easy to ____.

- I. synthesize
- II. mold into different shapes
- III. draw them into thin fibers

- A. I only
- B. II only
- C. III only
- D. I and II only

✓ E. I, II and III

10. The compound below represents a ____ that is formed by ____ polymerization.

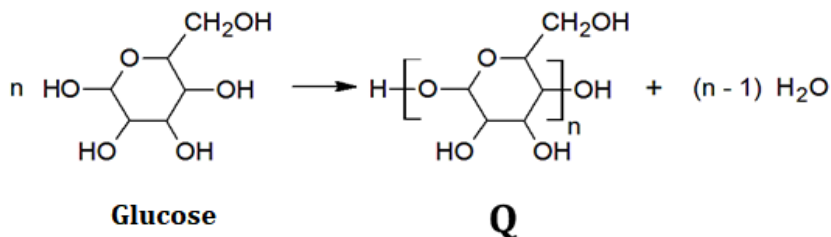


- ✓ A. polyamide condensation
- B. polyester addition
- C. polyamide addition
- D. starch condensation
- E. polyethylene addition

11. Polyester is a _____ formed by condensation of _____ and _____.

- ✓ A. synthetic polymer dihydroxy alcohol dicarboxylic acid
- B. natural polymer dihydroxy alcohol polyethylene
- C. synthetic polymer dihydroxy alcohol polypropylene
- D. synthetic polymer diamide dicarboxylic acid
- E. natural polymer diamide dicarboxylic acid

12. According to the reaction below, the polymer **Q** is a _____ polymer that can be prepared by _____ polymerization.



- ✓
- A. natural condensation
 - B. natural addition
 - C. synthetic addition
 - D. synthetic condensation
 - E. natural oxidation

13.

I

The formation of a polyester is an example of condensation polymerization

BECAUSE

II

Condensation polymers are formed by the joining of unsaturated monomers.

I **II**
 (T) (F) (T) (F) (CE)

I **II**
 (T) (F) (T) (F) (CE)

14. For each of the polymers below, write the **type of the polymer (synthetic or natural)**, the **name of the monomer** and the **type of polymerization (addition or condensation)**.

a)

	Polyester	Starch
Type of polymer (Natural or Synthetic)	Synthetic	Natural
Monomer(s)	Dicarboxylic acid and dihydroxyl alcohol	Glucose
Type of polymerization (Addition or Condensation)	Condensation	Condensation

b)

	Polyethene	Protein
Type of polymer (Natural or Synthetic)	Synthetic	Natural
Monomer(s)	Ethene	Amino acids
Type of polymerization (Addition or Condensation)	Addition	Condensation

15. Read the following passage and use your knowledge about polymers to answer questions **a – c**.

Many of the substances we encounter in the world around us are composed of macromolecules – molecules made up of hundreds or even thousands of atoms. In nature, substances with macromolecules are almost everywhere you look. They include fibers that give strength to trees and things made of wood, and they include proteins and the DNA found in all living creatures. They can also be synthetic as those found in plastics and synthetic fibers. The synthetic fibers can be thermoplastics or thermosetting polymers.



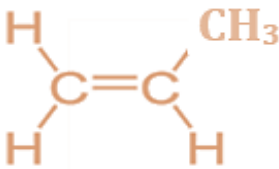
a) Polypropylene and Nylon are *thermoplastic* polymers. Explain what is meant by *thermoplastic*.

Thermoplastic polymer is a type of polymer that can be melted and molded repeatedly into shapes that are retained when it is cooled.

b) Some automobile parts are made up of polymers. Would these polymers be thermoplastic or thermosetting? Justify your answer.

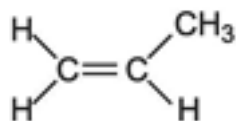
Thermoplastic so they can be melted and reshaped in case of accidents

c) Complete the table below about different polymers.

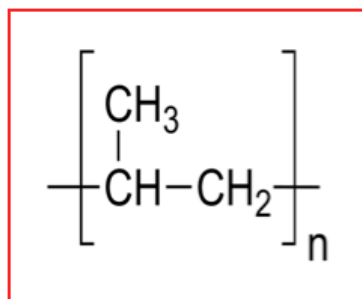
	Type (natural or synthetic)	Monomers	Type of polymerization
Polyester	Synthetic	 <p>Dicarboxylic acid</p>  <p>Dihydroxy alcohol</p>	Condensation
Polypropylene	Synthetic		Addition

16. Use your knowledge about polymerization reactions to write the formula of the missing monomer or polymer and the type of polymerization (addition or condensation).

Monomer(s):



Polymer(s):



Type of Polymerization: _____ **Addition**

17. For each of the following, identify if the statement is **true** or **false**. If the statement is false, rewrite the statements with the correction.

- a) Addition polymers are very reactive, so they are suitable for storing food and chemicals safely.

False

Addition polymers are unreactive, so they are suitable for storing food and chemical safely

- b) Thermosetting polymers are easier to recycle because the products made from them can't be remelted.

False

Thermoplastic polymers are easier to recycle because the products made from them can be remelted and molded repeatedly

- c) Polyamides are polymers that are formed when units of carboxylic acid and amine are joined by amide bonds.

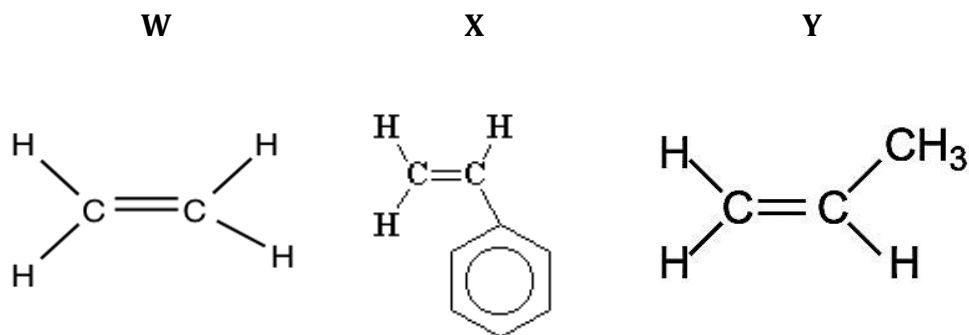
True

- d) From the advantages of plastics are that they are heavy, expensive and corrode easily

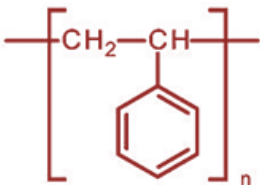
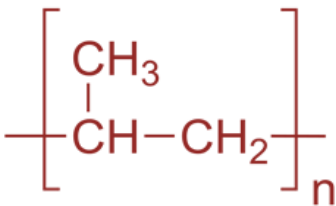
False

From the advantages of plastics are that they are light, cheap, and resistant to corrosion

18. A monomer is a molecule from which a polymer can be prepared. Use the structure of monomers **W**, **X** and **Y**, to answer questions **a – d**.



a) Complete the following table regarding the polymers that can be formed from monomers **X** and **Y**.

	Name of Polymer formed	Structure of Polymer Formed	Use of Polymer Formed
X	Polystyrene (PS)		Coffee cups
Y	Polypropylene (PP)		Utensils Beverage containers

b) Identify the type of polymerization reaction (*Addition* or *Condensation*) used to prepare polymers from the monomers **W**, **X** and **Y**. Justify your answer.

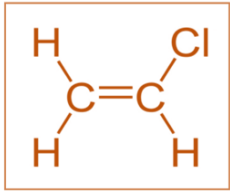
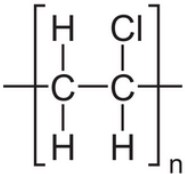
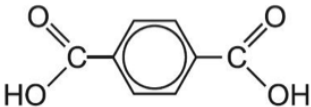
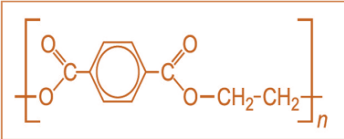
Addition polymerization

Because all the atoms present in the monomers are retained in the polymer product

c) Write a chemical equation to show how a polymer is formed from **W**.



19. Use your knowledge about polymerization reactions to write the formula of the missing monomer or polymer and the type of polymerization (addition or condensation).

Monomer	Polymer	Type of polymerization
		Addition
 and $\text{HO}-\text{CH}_2-\text{CH}_2-\text{OH}$		Condensation

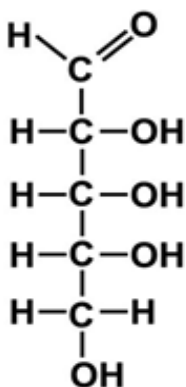
Grade 12 – CHM 71

Topic 6 (6.1) – Practice Questions – AK

1. Which of the following is a carbohydrate that is the major storage form in plants?

- ✓ A. Starch
- B. Glucose
- C. Sucrose
- D. Fructose
- E. Glycogen

2. The structure below represents a. _____ molecule.



- A. starch
- ✓ B. glucose
- C. sucrose
- D. fructose
- E. glycogen

3. Monomers and polymers of aldehydes and ketones that are made up of C, H, and O are called _____.

- A. lipids
- B. enzymes
- C. amino acids
- D. nucleic acids
- ✓ E. carbohydrates

4. Which of the following molecular formulae belong(s) to a monosaccharide?

- I. $\text{C}_6\text{H}_{12}\text{O}_6$
- II. $\text{C}_5\text{H}_{10}\text{O}_5$
- III. $\text{C}_{12}\text{H}_{22}\text{O}_{11}$

- A. I only
- B. II only
- C. III only
- ✓ D. I and II only
- E. I, II and III

5. Which of the following molecules is **not** a polymer of glucose?

- I. Starch
- II. Cellulose
- III. Triglyceride

- A. I only
- B. II only
- ✓ C. III only
- D. I and II only
- E. II and III only

6. Which of the following substances is/are a carbohydrate?

- I. $C_4H_6O_3$
 - II. $C_6H_{12}O_6$
 - III. $C_2H_6O_1$
- A. I only
 - B. II only
 - ✓ C. III only
 - D. I and III only
 - E. I, II and III

7. Which of the following chemical formula belongs to a monosaccharide?

- A. C_2H_6O
- B. $C_2H_4O_3$
- ✓ C. $C_6H_{12}O_6$
- D. $C_6H_{22}O_{11}$
- E. $C_6H_{12}O_2$

8. The number of hydrogen atoms in a molecule of monosaccharide containing six carbon atoms is _____.

- A. 2
- B. 3
- C. 4
- D. 6
- ✓ E. 12

9. Which of the following is/are **true** about glucose and fructose?

- I. Both are monosaccharides
 - II. They are the simplest carbohydrates
 - III. Glucose molecule has an aldehyde group while fructose has a ketone group
- A. I only
 - B. II only
 - C. III only
 - D. I and II only
 - ✓ E. I, II, and III

10. A disaccharide molecule composed of one fructose molecule and one glucose molecule is known as _____.

- A. starch
- B. glucose
- ✓ C. sucrose
- D. fructose
- E. Glycogen

11. Which of the following formulae is an example of carbohydrates?

- A. $C_6(H_2O)_{12}$
- ✓ B. $C_6(H_2O)_6$
- C. $C_8(H_2O)_{14}$
- D. $C_6(NH_2)_6OH$
- E. CH_2NH_2COOH

12. The cyclic forms of two simple sugars can be combined by _____ reaction to form _____.

- A. oxidation monosaccharides
- ✓ B. condensation disaccharides
- C. reduction polysaccharides
- D. combustion disaccharides
- E. precipitation starch

13. Which of the following statements is/are **false** about carbohydrates?

- I. They are found in plants and animals
- II. They contain nitrogen and phosphorus
- III. Carboxylic acids are examples of carbohydrates

- A. I only
- B. II only
- C. III only
- ✓ D. II and III only
- E. I, II and III

14. Which of the following is **true** about carbohydrates?

- A. They are not found in nature
- B. They contain a carboxyl group
- ✓ C. The ratio of carbon atoms to oxygen atoms is 1:1
- D. They are always formed of nitrogen, oxygen and carbon
- E. RNA is responsible of their synthesis in living things

15. Which of the following statements is **true** about sucrose?

- A. It is a lipid
- B. RNA is responsible of its synthesis in the living cells
- C. It is a disaccharide formed of two glucose molecules
- D. It is a disaccharide formed of two fructose molecules
- ✓ E. It is a disaccharide formed of one fructose molecule and one glucose molecule

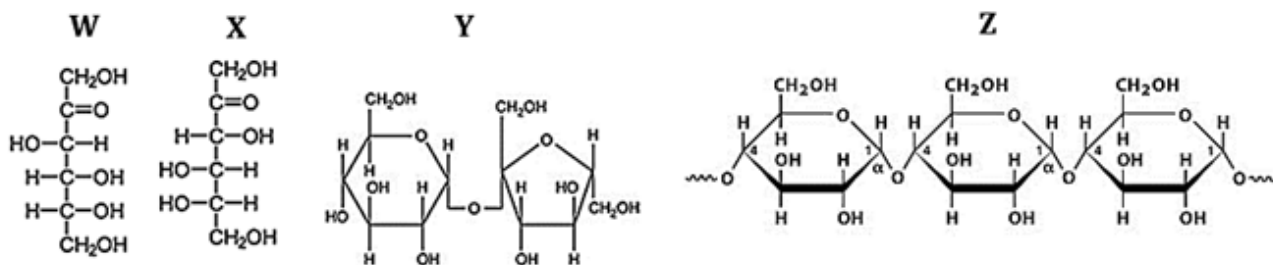
16. Which of the following statements is **true** glucose and fructose?

- A. Glucose is a monosaccharide while fructose is a disaccharide
- B. Glucose has a molecular formula of $C_5H_{10}O_5$ while fructose has a molecular formula of $C_5H_{10}O_5$
- C. Glucose and fructose are disaccharides
- D. They are both monosaccharides with a molecular formula of $C_6H_{12}O_6$, glucose has a ketone group while fructose has an aldehyde group.
- ✓ E. They are both monosaccharides with a molecular formula of $C_6H_{12}O_6$, glucose has an aldehyde group while fructose has a ketone group.

17. Which of the following describes the main difference between fructose and glucose?

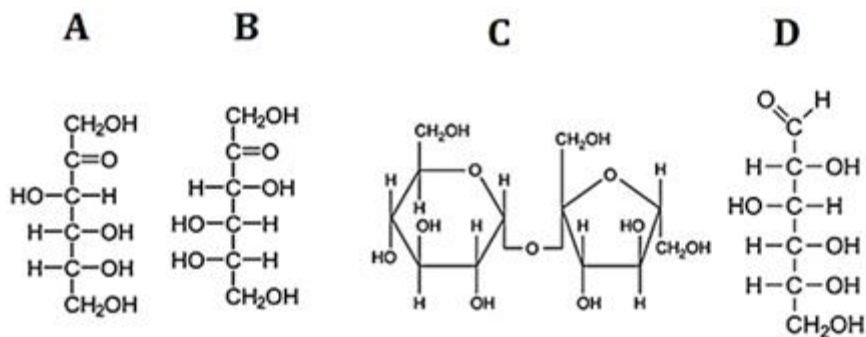
- I. Fructose is a monosaccharide while glucose is a disaccharide
 - II. A molecule of fructose contains five carbon atoms while a molecule of glucose contains six carbon atoms
 - III. Fructose molecule contains a ketone group while a glucose molecule contains an aldehyde group
- A. I only
 - B. II only
 - ✓ C. III only
 - D. I and II only
 - E. I, II and III

18. Which of the following structures represents glycogen, a polysaccharide?



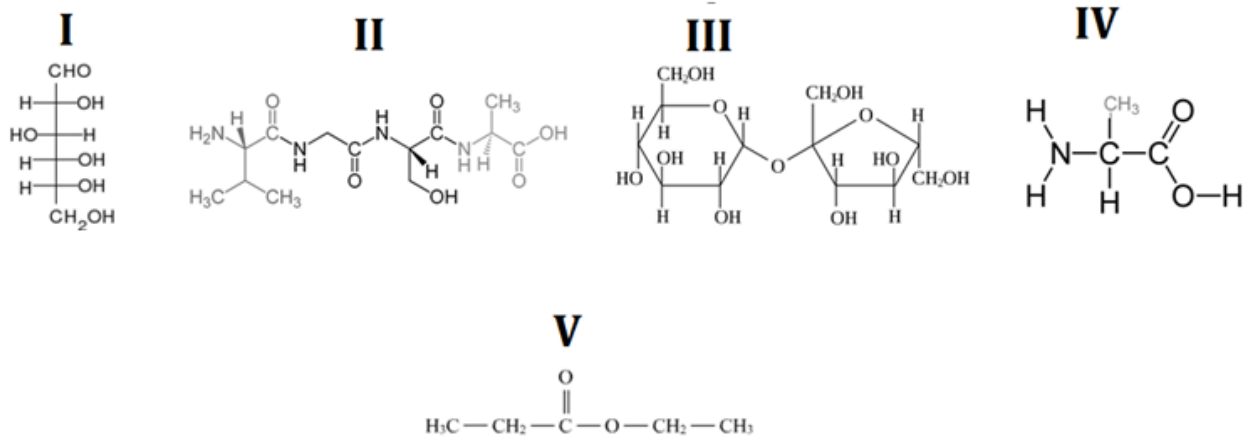
- A. W only
- B. X only
- C. Y only
- ✓ D. Z only
- E. Y and Z only

19. Which of the following diagrams represents a glucose molecule?



- A. A only
 B. B only
 C. C only
 ✓ D. D only
 E. A and B only

- Use the following structures (I – V) to identify the structure that best fits questions 20 – 21.



20. Which of the above structures represents glucose?

- ✓ A. I
 B. II
 C. III
 D. IV
 E. V

21. Which of the above structure is a disaccharide?

- A. I
- B. II
- ✓ C. III
- D. IV
- E. V

22. Explain the differences among a monosaccharide, a disaccharide and a polysaccharide.

A monosaccharide is a simple sugar

A disaccharide contains two monosaccharides

A polysaccharide contains 12 or more glucose monomers

23. A monosaccharide contains 12 carbon atoms. Answer questions **a** and **b**.

a) How many hydrogen atoms does a molecule of this monosaccharide contain?

24

b) Write the molecular formula for this monosaccharide.

$C_{12}H_{24}O_{12}$

24. Read the following passage to be able to answer questions **a** and **b**.

Glucose Testing: The ability to detect monosaccharides is an important function of clinical laboratories and at-home tests for those with diabetes mellitus. The Benedict's test is one way to test for monosaccharides. Available test strips allow precise measurement of the sugar level.

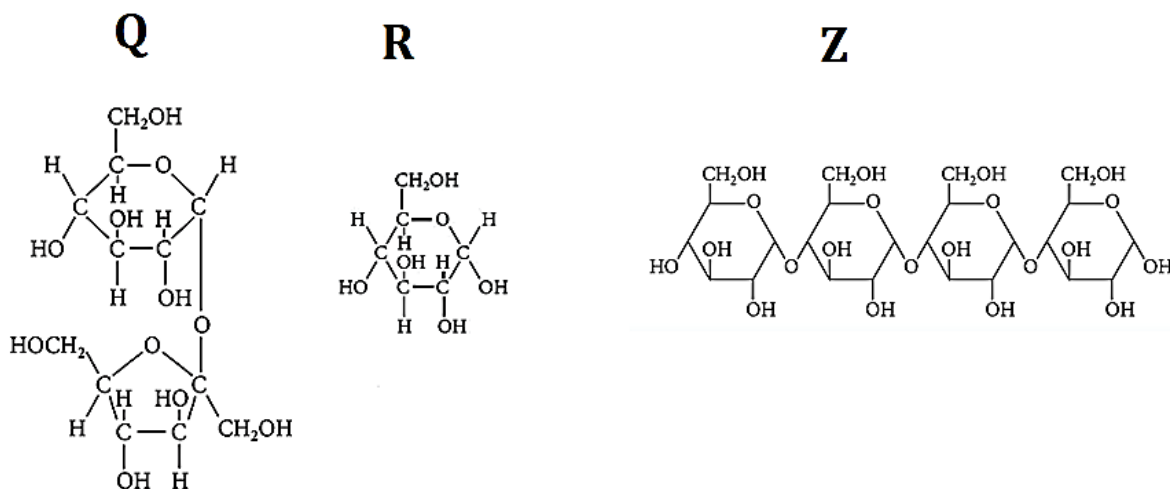
a) Monosaccharides are organic compounds. To which family do they belong to?

Carbohydrates

b) List two examples of monosaccharides.

Glucose and Fructose

25. Use the structures **Q**, **R**, and **Z** that represent different types of carbohydrates to answer questions **a** and **b**.



a) Complete the table below to compare between the types of carbohydrates.

Structure	Q	R	Z
Type of Carbohydrate	Disaccharide	Monosaccharide	Polysaccharide
Source	Sugarcane plants	Plants and animals	Plants
Example	Sucrose	Glucose	Starch

b) Describe how does structure **Q** form.

It forms when two simple sugars (glucose and fructose) condense.

26. Describe the difference between the important structural features of sucrose and glucose.

Sucrose is a disaccharide of glucose and fructose

Glucose is a monosaccharide with an aldehyde functional group

27. Which of the following compounds is/are a carbohydrate? **Circle the correct answer(s)**
Justify your answer.

$C_3H_6O_2$	$C_5H_{10}O_5$	$C_6H_{12}O_6$	C_3H_8O	C_3H_6O
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Their general formula is $C_n(H_2O)_n$

28. Classify each of the following compounds as a monosaccharide, disaccharide or polysaccharide.

Compound	Type of polysaccharide (monosaccharide, disaccharide or polysaccharide)
Fructose	monosaccharide
Starch	polysaccharide
Sucrose	disaccharide