

1. A condensation polymerization produces a polymer and

- A. H₂
- B. O₂
- C. CO₂
- D. H₂O

2. Which organic compound is classified as a primary alcohol?

- A. Ethylene glycol
- B. Ethanol
- C. Glycerol
- D. 2-butanol

3. For ethyne: C₂H₂

What is the total number of electrons shared between the carbon atoms?

- A. 6
- B. 2
- C. 3
- D. 4

4. Which nuclide is a radioisotope used in the study of organic reaction mechanisms?

- A. Carbon-12
- B. Carbon-14
- C. Uranium-235
- D. Uranium-238

5. Which set contains one natural polymer and one synthetic polymer?

- A. Cellulose and Starch
- B. Polyethylene and Nylon
- C. Protein and Starch
- D. Protein and Nylon

6. Aldehydes can be synthesized by the oxidation of

- A. Primary alcohols
- B. Secondary alcohols
- C. Organic acids
- D. Inorganic acids

7. Given the reaction: $C_2H_2 + 2H_2 \rightarrow C_2H_6$

This reaction represents:

- A. Substitution
- B. Addition
- C. Esterification
- D. Saponification

8. Which pair of names refers to the same compound?

- A. Ethyne and Acetylene
- B. Ethyne and Ethene
- C. Ethane and Acetylene
- D. Ethane and Ethene

9. A condensation polymerization reaction is best described as the

- A. Joining of monomers by the removal of oxygen
- B. Joining of monomers by the removal of water
- C. Oxidation of a hydrocarbon by oxygen
- D. Oxidation of a hydrocarbon by water

10. Which formula represents a ketone?

- A. CH_3COOH
- B. $\text{C}_2\text{H}_5\text{OH}$
- C. CH_3COCH_3
- D. $\text{CH}_3\text{COOCH}_3$

11. Which subatomic particle is found in all isotopes of hydrogen?

- A. Proton
- B. Neutron
- C. Electron
- D. Positron

12. The bond between hydrogen and oxygen in a water molecule is classified as

- A. Ionic and Nonpolar
- B. Ionic and Polar
- C. Covalent and Nonpolar
- D. Covalent and Polar

13. What is the total number of hydrogen atoms required to form 1 molecule of $C_3H_5(OH)_3$?

- A. 1
- B. 5
- C. 3
- D. 8

14. A compound that can act as an acid or a base is referred to as

- A. A neutral substance

B. An amphoteric substance

C. A monomer

D. An isomer

15. Which compound is an electrolyte?

A. CH_3OH

B. CH_3COOH

C. $\text{C}_3\text{H}_5(\text{OH})_3$

D. $\text{C}_{12}\text{H}_{22}\text{O}_{11}$

16. Which organic compound is classified as an acid?

A. $\text{HC}_3\text{HC}_2\text{COOH}$

B. $\text{HC}_3\text{HC}_2\text{OH}$

C. $\text{C}_{12}\text{H}_{22}\text{O}_{11}$

D. $\text{C}_6\text{H}_{12}\text{O}_6$

17. The products of the fermentation of a sugar are ethanol and

A. Water

B. Oxygen

C. Carbon dioxide

D. Sulfur dioxide

18. The reaction $\text{CH}_2\text{CH}_2 + \text{H}_2 \rightarrow \text{CH}_3\text{CH}_3$ is an example of

- A. Substitution
- B. Addition
- C. Esterification
- D. Fermentation

19. In which pair of hydrocarbons does each compound contain only one double bond per molecule?

- A. C_2H_2 and C_2H_6
- B. C_2H_2 and C_3H_6
- C. C_4H_8 and C_2H_4
- D. C_6H_6 and C_7H_8

20. During fractional distillation, hydrocarbons are separated according to their

- A. Boiling points
- B. Melting points
- C. Triple points
- D. Saturation points

Answer Key

- 1. D
- 2. B
- 3. A

4. B

5. D

6. A

7. B

8. A

9. B

10. C

11. A

12. D

13. D

14. B

15. B

16. A

17. C

18. B

19. C

20. A