

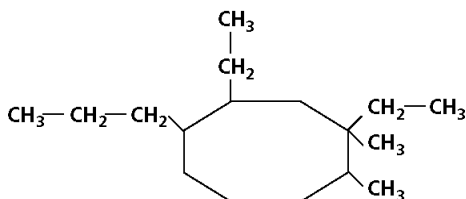
## Chem.G11-Q3W6-Organic chemistry-Test

### Multiple Choice

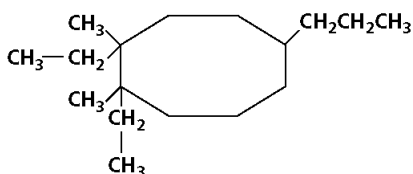
Identify the choice that best completes the statement or answers the question.

\_\_\_\_\_ 1. The correct structural formula of 1,2-diethyl-2,3-dimethyl-6-propylcyclooctane is \_\_\_\_\_.

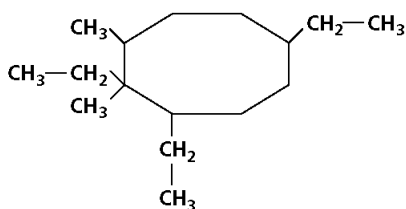
a.



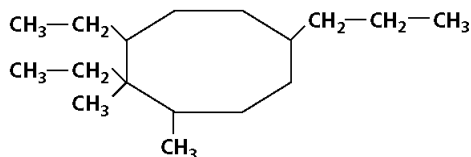
b.



c.



d.



\_\_\_\_\_ 2. A monomer can take part in an addition reaction if it contains \_\_\_\_\_.

- |                            |                           |
|----------------------------|---------------------------|
| a. glucose                 | c. a pair of single bonds |
| b. a double or triple bond | d. two functional groups  |

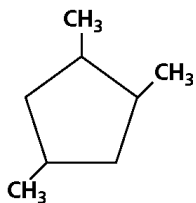
\_\_\_\_\_ 3. The term *cis* or *trans* in the name of a compound shows that the compound is a(n) \_\_\_\_\_.

- |                     |            |
|---------------------|------------|
| a. alkane           | c. alkyne  |
| b. geometric isomer | d. polymer |

\_\_\_\_\_ 4. A process that typically yields alcohols is \_\_\_\_\_.

- |                   |                 |
|-------------------|-----------------|
| a. polymerization | c. cracking     |
| b. distillation   | d. fermentation |

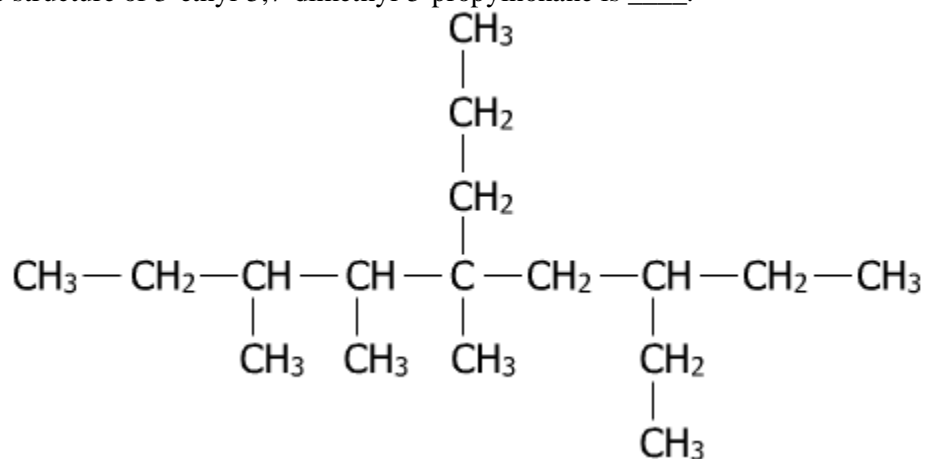
\_\_\_\_ 5. Name the cycloalkane given below.



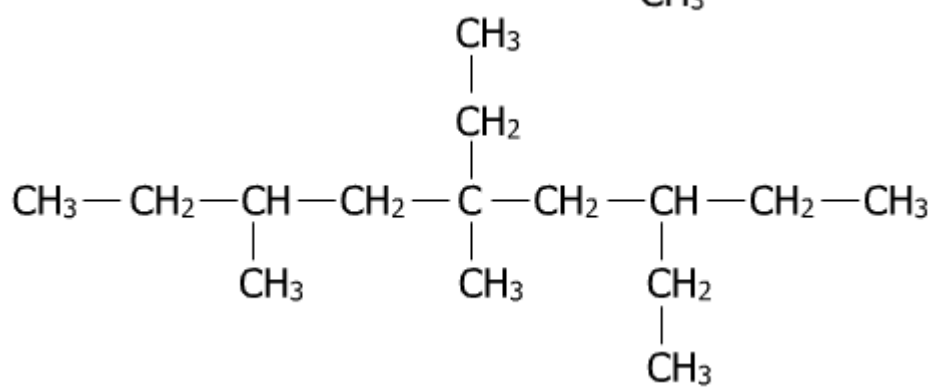
- \_\_\_\_ a. 1,2,4-trimethylcyclohexane                      c. 1,3,5-trimethylcyclopentane  
\_\_\_\_ b. 1,2,4-trimethylcyclopentane                    d. 1,2,4-dimethylcyclopentane
- \_\_\_\_ 6. Which of the following substances can be remolded without changing the chemical composition?  
\_\_\_\_ a. Bakelite    c. Polyethylene  
\_\_\_\_ b. Glycine    d. Propanoic acid
- \_\_\_\_ 7. Which pair of reactants listed below could take part in a condensation reaction?  
\_\_\_\_ a. an alkane and an alcohol                              c. water and an alcohol  
\_\_\_\_ b. methane and an alcohol                              d. an amine and a carboxylic acid
- \_\_\_\_ 8. The six extra electrons in a benzene molecule are \_\_\_\_\_.  
\_\_\_\_ a. shared equally by all six carbon atoms  
\_\_\_\_ b. arranged in double bonds  
\_\_\_\_ c. shared equally by all six hydrogen atoms  
\_\_\_\_ d. arranged in alternate single and double bonds
- \_\_\_\_ 9. Which polymer is a condensation polymer?  
\_\_\_\_ a. PET    c. Teflon  
\_\_\_\_ b. Orlon    d. Nylon-6,6
- \_\_\_\_ 10. Isomers have \_\_\_\_\_.  
\_\_\_\_ a. different chemical and physical properties  
\_\_\_\_ b. the same chemical properties, but different physical properties  
\_\_\_\_ c. different chemical properties, but the same physical properties  
\_\_\_\_ d. the same chemical and physical properties
- \_\_\_\_ 11. An organic compound that contains a carbon atom bonded to a hydrogen atom and double-bonded to an oxygen atom is an \_\_\_\_\_.  
\_\_\_\_ a. alcohol    c. ether  
\_\_\_\_ b. aldehyde    d. alkene
- \_\_\_\_ 12. Which compound has a hydroxyl group?  
\_\_\_\_ a.  $\text{CH}_3 - \text{O} - \text{CH}_2\text{CH}_3$                                       c.  $\begin{array}{c} \text{O} \\ || \\ \text{CH}_3 - \text{C} - \text{CH}_2\text{CH}_3 \end{array}$   
\_\_\_\_ b.  $\text{CH}_3 - \text{OH}$     d.  $\begin{array}{c} \text{O} \\ || \\ \text{CH}_3 - \text{C} - \text{O} - \text{CH}_3 \end{array}$
- \_\_\_\_ 13. The correct IUPAC name of the compound  $\begin{array}{c} \text{CH}_3 \\ | \\ \text{CH}_3\text{CH} \text{---} \text{CH} \text{---} \text{CH} \text{---} \text{CH}_3 \\ | \\ \text{CH}_3 \end{array}$  is \_\_\_\_\_.  
\_\_\_\_ a. 2,3-dimethylbutane                                      c. 3,4-dimethylpentane  
\_\_\_\_ b. 2,2,3-dimethylbutane                                  d. 2,3-dimethylpentane

\_\_\_\_\_ 14. The structure of 3-ethyl-5,7-dimethyl-5-propylnonane is \_\_\_\_\_.

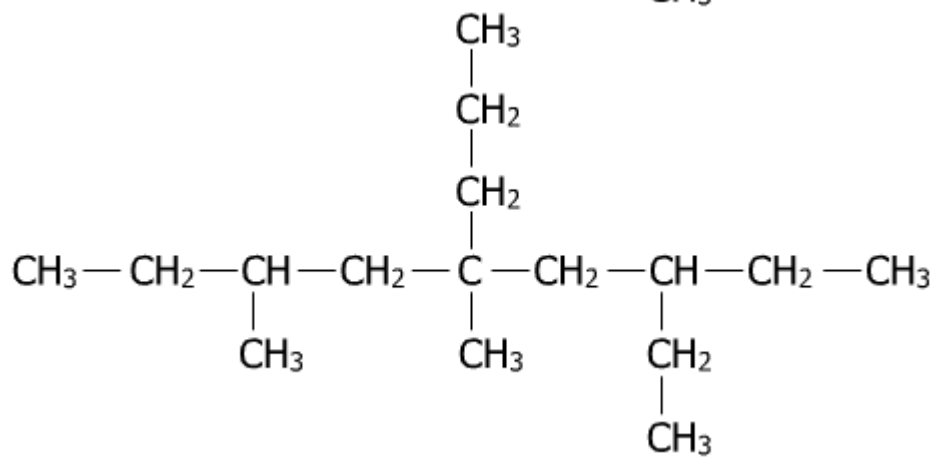
a.



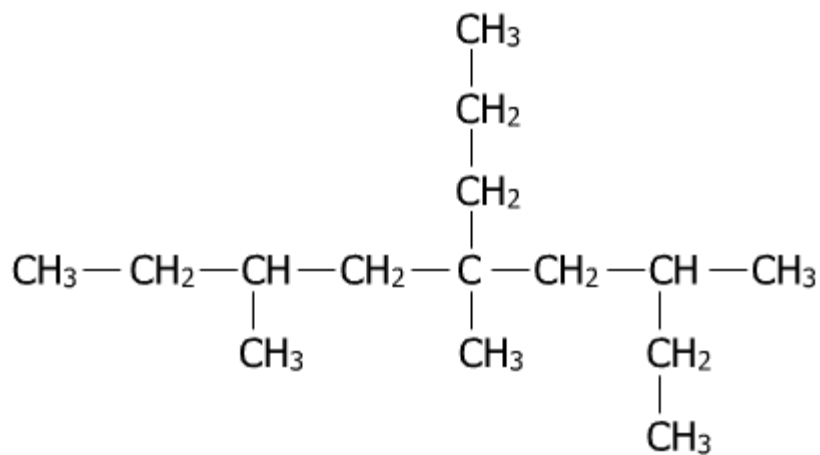
b.



c.

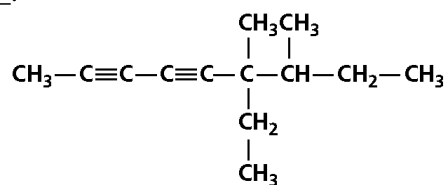


d.

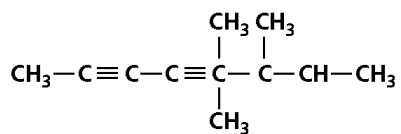


15. The correct condensed structure of a compound having the IUPAC name 6-ethyl-6,7-dimethyl-2,4-dioctyne is \_\_\_\_\_.

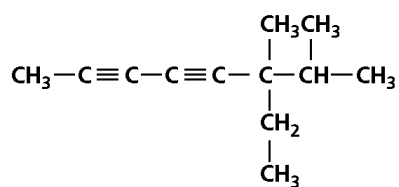
a.



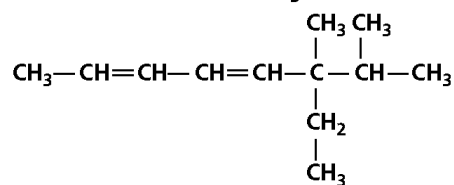
b.



c.



d.



## Matching

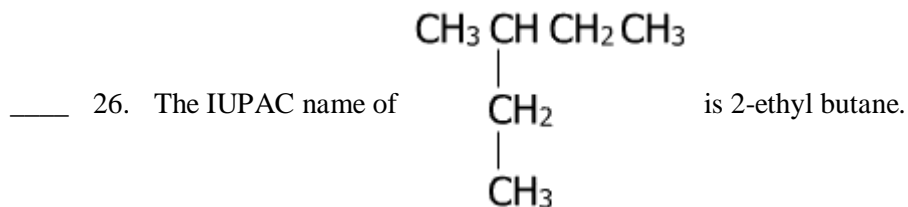
*Match each item with the correct statement below.*

- |                            |                            |
|----------------------------|----------------------------|
| a. addition reaction       | g. polymer                 |
| b. aromatic hydrocarbons   | h. reforming               |
| c. cross-linking           | i. saturated hydrocarbon   |
| d. fractional distillation | j. substituted hydrocarbon |
| e. functional group        | k. thermosetting           |
| f. isomers                 |                            |

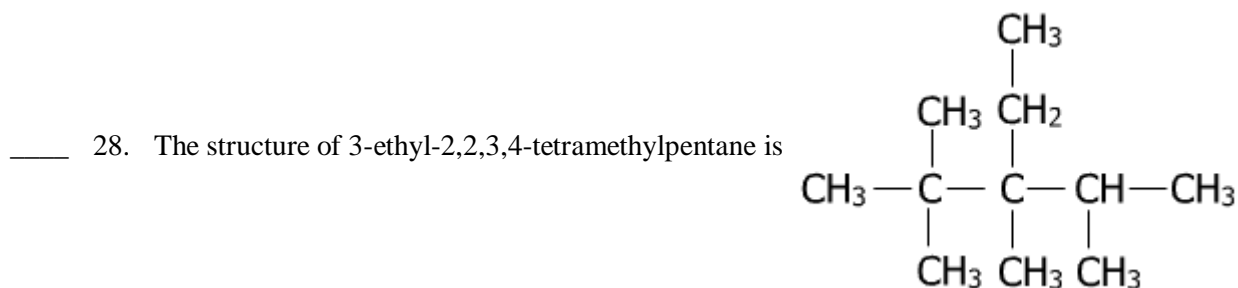
- \_\_\_\_ 16. Hydrocarbons that contain a benzene-like structure are classified as \_\_\_\_.
- \_\_\_\_ 17. Polymers are made when monomers containing double bonds combine with each other in a reaction known as a(n) \_\_\_\_.
- \_\_\_\_ 18. \_\_\_\_ is a process by which adjacent chains in a polymer join together and strengthen the polymer.
- \_\_\_\_ 19. A(n) \_\_\_\_ plastic is one that remains hard and rigid once it has been formed.
- \_\_\_\_ 20. \_\_\_\_ are compounds that have the same molecular formula, but different structural formulas.
- \_\_\_\_ 21. A(n) \_\_\_\_ is a compound that contains only carbon and hydrogen atoms joined to each other by single bonds.
- \_\_\_\_ 22. The portion of an organic molecule that is responsible for the properties of that molecule is known as a(n) \_\_\_\_.
- \_\_\_\_ 23. \_\_\_\_ is the process by which complex organic mixtures can be separated into their constituents.
- \_\_\_\_ 24. A(n) \_\_\_\_ is a large molecule that is made up of many smaller repeating units.
- \_\_\_\_ 25. In the process known as \_\_\_\_, large hydrocarbons can be converted to other compounds, such as aromatic hydrocarbons.

**True/False**

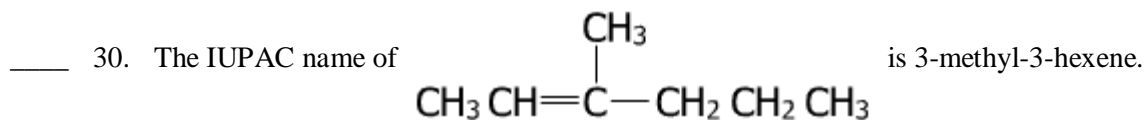
Indicate whether the statement is true or false.



\_\_\_\_\_ 27. Aldehydes cannot form hydrogen bonds.



\_\_\_\_\_ 29. Cyclohexane is a cyclic hydrocarbon having six carbon atoms in a straight chain.



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