

**MINISTRY OF EDUCATION**  
**SECONDARY ENGAGEMENT PROGRAMME**  
**GRADE 10**  
**CHEMISTRY**

**WEEK 3**

**LESSON 2 – WORKSHEET**

**Circle the correct answers for each question below.**

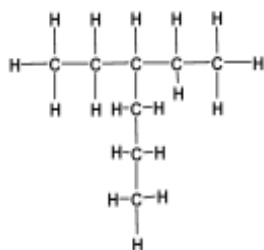
1. Two isomeric forms of a saturated hydrocarbon
  - (a) have the same structure.
  - (b) have different compositions of elements.
  - (c) have the same molecular formula.
  - (d) have different content of the isotopes of hydrogen.
  - (e) react vigorously with one another.
  
2. Which of the following hydrocarbons does **not** have isomers?
  - (a)  $C_7H_{16}$
  - (b)  $C_6H_{14}$
  - (c)  $C_5H_{10}$
  - (d)  $C_4H_8$
  - (e)  $C_3H_8$
  
3. How many isomeric alkanes of the molecular formula  $C_5H_{12}$  are there?
  - (a) 1
  - (b) 2
  - (c) 3
  - (d) 4
  - (e) 5
  
4. A reaction in which a carboxylic acid reacts with a base to form a salt and water is called \_\_\_\_\_.
  - (a) ionization
  - (b) esterification
  - (c) hydrolysis
  - (d) saponification
  - (e) neutralization

1. Butane exists in the form of two structural isomers. Draw the structural formula and write the IUPAC name of each.

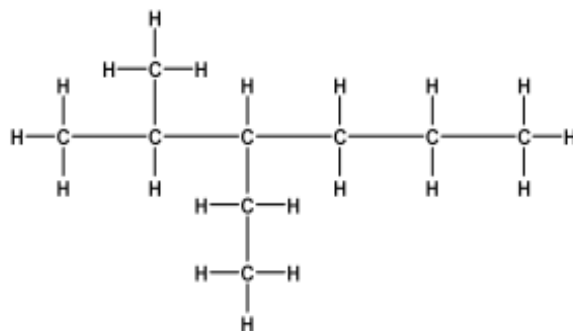
2. Draw the condensed straight-chain structures for heptane and nonane.

3. Match each name in a-d with the correct structure in e-h.

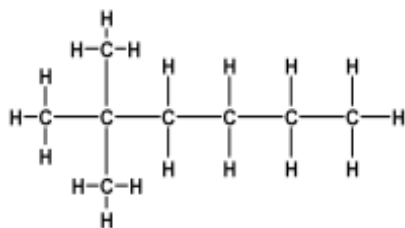
e.



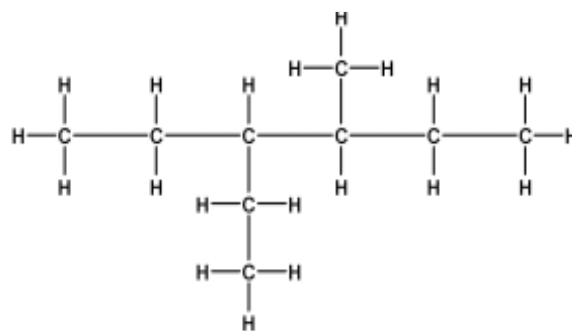
f.



g.



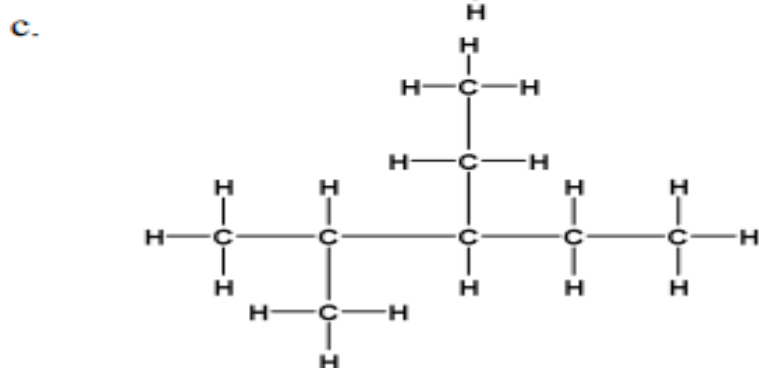
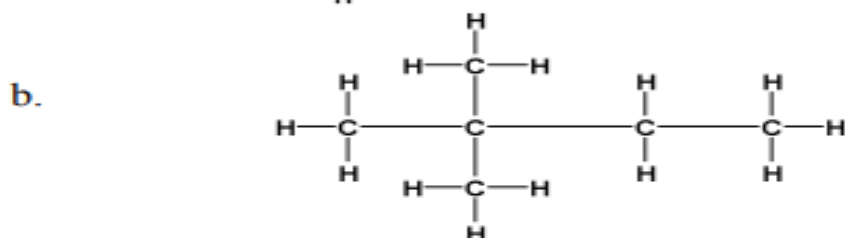
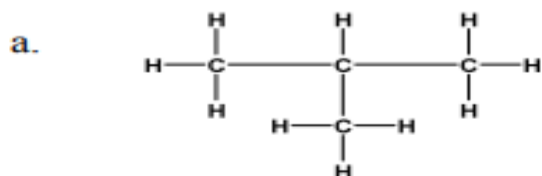
h.



a. 3-ethyl-2-methylhexane  
b. 3-ethyl-4-methylhexane

c. 2,2-dimethylhexane  
d. 3-ethylhexane

4. Write the names of the following alkanes:

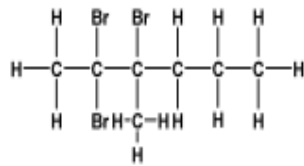


5. How many hydrogen atoms would be in a molecule of an alkane containing:

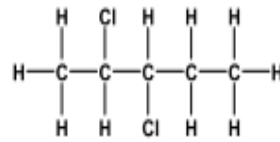
6. Draw the condensed structural formulas of the following compounds:

7. Write the correct name for each of the following structures:

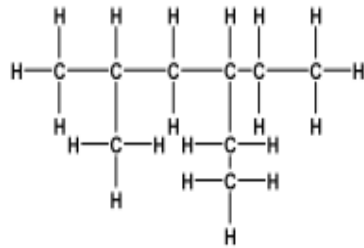
a.



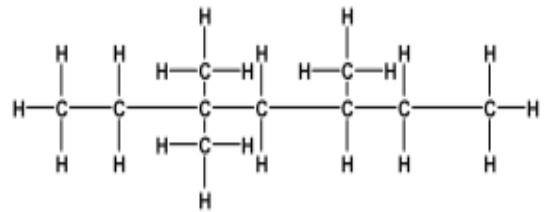
c.



b.



d.



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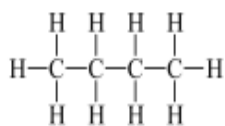
**WEEK 3**

**WORKSHEET – ANSWERS**

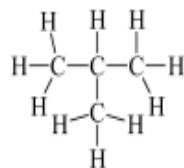
**Circle the correct answers for each question below.**

1. Two isomeric forms of a saturated hydrocarbon
  - (a) have the same structure.
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  - (a) 1
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4. A reaction in which a carboxylic acid reacts with a base to form a salt and water is called \_\_\_\_\_.
  - (a) ionization
  - (b) esterification
  - (c) hydrolysis
  - (d) saponification
  - (e) **neutralization**

1. Butane exists in the form of two structural isomers. Draw the structural formula and write the IUPAC name of each.



butane



2-methylpropane

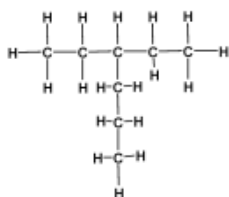
2. Draw the condensed straight-chain structures for heptane and nonane.



3. Match each name in a-d with the correct structure in e-h.

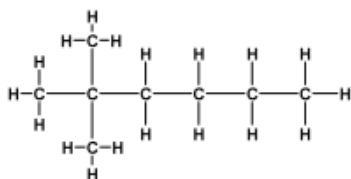
d. 3-ethylhexane

e.



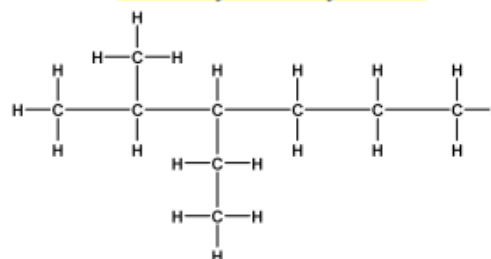
c. 2,2-dimethylhexane

g.



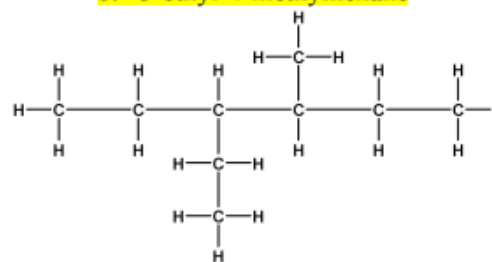
a. 3-ethyl-2-methylhexane

f.

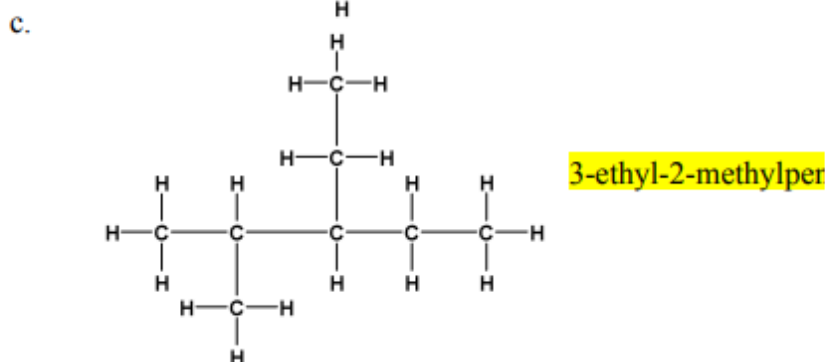
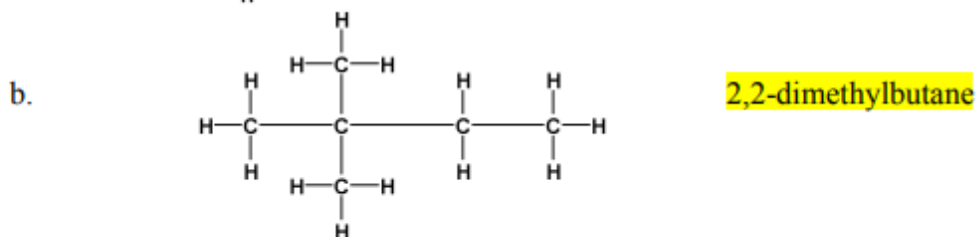
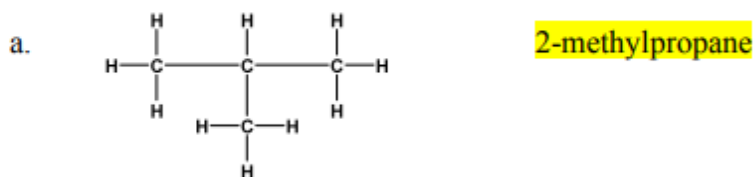


b. 3-ethyl-4-methylhexane

h.



4. Write the names of the following alkanes:

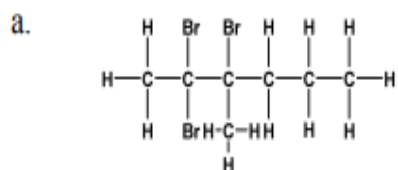


5. How many hydrogen atoms would be in a molecule of an alkane containing:  
15 carbon atoms? **32 hydrogen atoms**

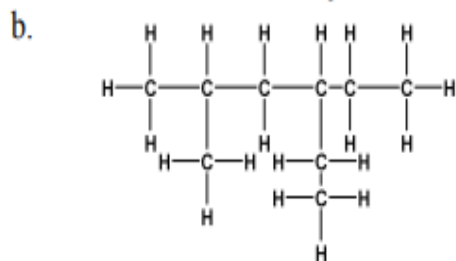
50 carbon atoms? **102 hydrogen atoms**

6. Draw the condensed structural formulas of the following compounds:

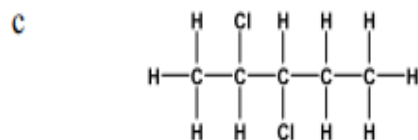
7. Write the correct name for each of the following structures:



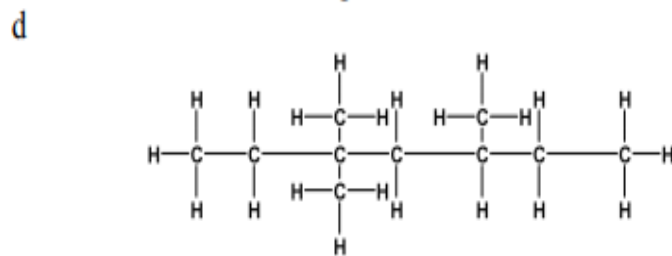
2,2,3-tribromo-3-methylhexane



4-ethyl-2-methylhexane



2,3-dichloropentane



3,3,5-trimethylheptane