

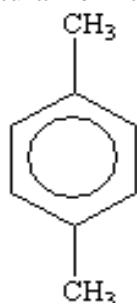
Answers to Unit 2, Review for Quiz #1: Hydrocarbons

Answers to multiple choice questions:

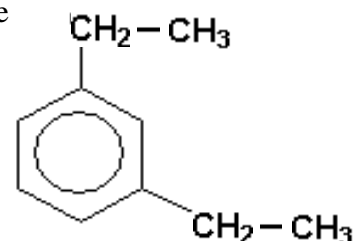
1. a	9. d	17. b	25. d	33. c
2. c	10. b	18. c	26. d	34. a
3. a	11. c	19. d	27. d	35. a
4. d	12. b	20. b	28. b	36. d
5. a	13. b	21. a	29. b	37. b
6. d	14. a	22. c	30. d	38. c
7. d	15. b	23. c	31. c	39. c
8. b	16. d	24. a	32. b	40. a

Part II: Use condensed structural formulas or stick diagrams to draw the following molecules:

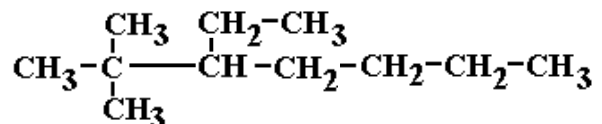
a) para-dimethylbenzene



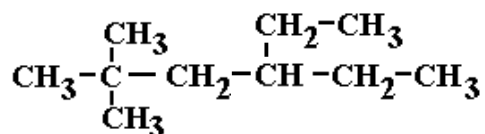
b) meta-diethylbenzene



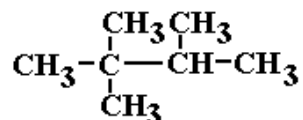
c) 3-ethyl-2,2-dimethylheptane



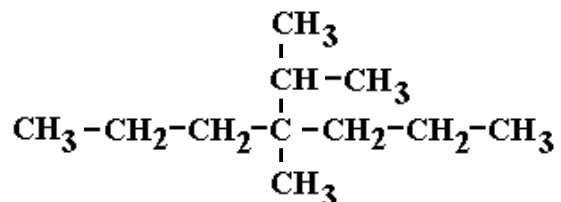
d) 4-ethyl-2,2-dimethylhexane



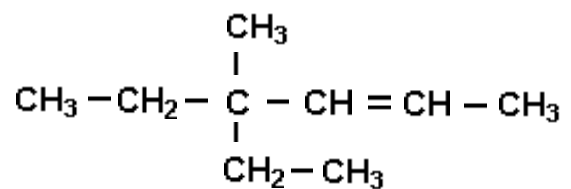
e) 2,2,3-trimethylbutane



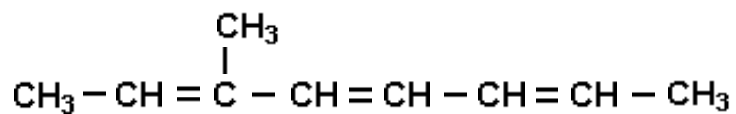
f) 4-isopropyl-4-methylheptane



g) 4-ethyl-4-methyl-2-hexene



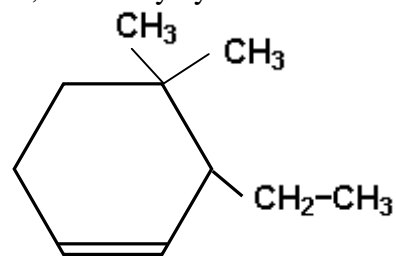
h) 3-methyl-2,4,6-octatriene



i) 1-ethyl-3-methyl cyclopentane

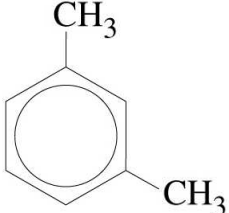
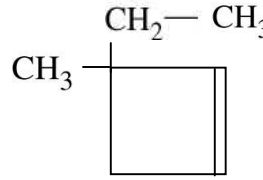
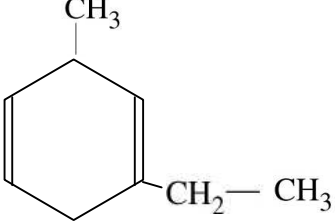
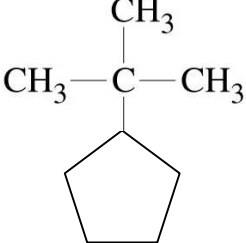
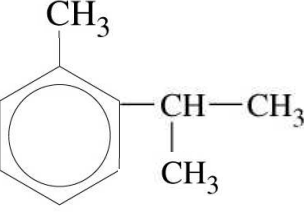


j) 3-ethyl-4,4-dimethylcyclohexene

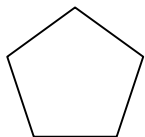


Part III:

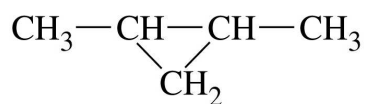
- Name the following molecules using the IUPAC system.
- Where possible, also name any aromatic hydrocarbons with the "ortho, meta, para" name.
- Write the molecular formula for each molecule.
- Identify any structural isomers among the molecules.

$\begin{array}{c} \text{CH}_3 \quad \text{CH}_3 \\ \quad \\ \text{CH}_3\text{CH}_2\text{CH}_2\text{CHCH}_2\text{CHCH}_2\text{CH}_2\text{CH}_3 \end{array}$ <p>3,5-dimethyloctane</p>	$\begin{array}{c} \text{CH}_3-\text{CH}-\text{CH}-\text{CH}_3 \\ \quad \quad \\ \quad \quad \text{CH}_2 \end{array}$ <p>1,2-dimethylcyclopropane</p>	
$\begin{array}{c} \text{CH}_3 \\ \\ \text{CH}_3\text{CH}_2\text{CH}_2\text{C}-\text{CH}_3 \\ \\ \text{CH}_3 \end{array}$ <p>2,2-dimethylpentane</p>	$\begin{array}{c} \text{CH}_3 \\ \\ \text{CH}_3-\text{C}-\text{CH}_3 \\ \\ \text{CH}_3 \end{array}$ <p>2,2-dimethylpropane</p>	 <p>(meta) 1,3-dimethylbenzene</p>
$\begin{array}{c} \text{CH}_3-\text{CH}-\text{CH}_2-\text{CH}-\text{CH}_3 \\ \quad \quad \\ \text{CH}_2 \quad \quad \text{CH}_3 \\ \\ \text{CH}_3 \end{array}$ <p>2,4-dimethylhexane</p>	$\begin{array}{c} \text{CH}_3 \\ \\ \text{CH}_3-\text{C}\equiv\text{C}-\text{CH}_2\text{CH}_2\text{C}-\text{CH}_3 \\ \\ \text{CH}_3 \end{array}$ <p>6,6-dimethyl-2-heptyne</p>	
 <p>3-ethyl-3-methylcyclobutene</p>	 <p>1-ethyl-3-methyl-1,4-cyclohexadiene</p>	
 <p>tert-butylcyclopentane</p>	 <p>1-isopropyl-2-methylbenzene</p>	$\begin{array}{c} \text{CH}_2 \\ \\ \text{CH}_3-\text{C}-\text{C}-\text{CH}_2-\text{CH}_3 \\ \\ \text{CH} \\ \\ \text{CH}_2 \\ \\ \text{CH}_3 \end{array}$ <p>2-ethyl-3-methyl-1,3-hexadiene</p>
<p>Name these geometric isomers:</p> $\begin{array}{c} \text{CH}_3\text{CH}_2 \quad \quad \text{CH}_3 \\ \quad \quad \diagdown \quad \diagup \\ \quad \quad \text{C}=\text{C} \\ \quad \quad \diagup \quad \diagdown \\ \text{CH}_3 \quad \quad \text{CH}_2\text{CH}_2\text{CH}_3 \end{array}$ <p>trans-3,4-dimethyl-3-heptene</p>		$\begin{array}{c} \text{CH}_3\text{CH}_2 \quad \quad \text{CH}_2\text{CH}_3 \\ \quad \quad \diagdown \quad \diagup \\ \quad \quad \text{C}=\text{C} \\ \quad \quad \diagup \quad \diagdown \\ \text{H} \quad \quad \text{CH}_3 \end{array}$ <p>cis-3-methyl-3-hexene</p>

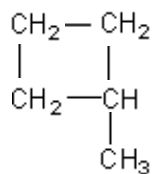
Part IV: Draw structural diagrams for eight structural isomers of pentene. Name each molecule.



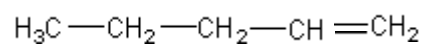
cyclopentane



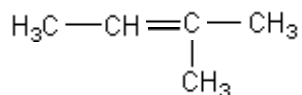
1,2-dimethylcyclopropane



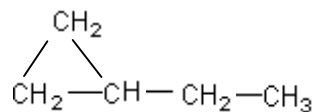
cyclobutane



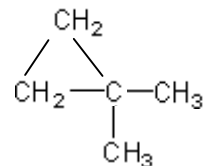
1-pentene



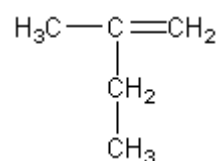
2-methyl-2-butene (can be cis or trans)



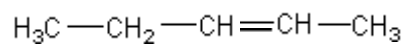
ethylcyclopropane



1,1-dimethylcyclopropane



2-methyl-1-butene (can be cis or trans)



2-pentene (can be cis or trans)