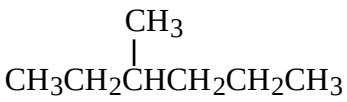
Name: _____

Period: ___

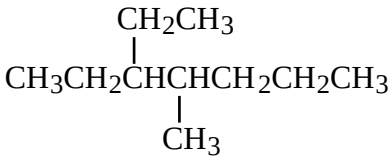
I. Alkanes

(1) Name the following alkanes.

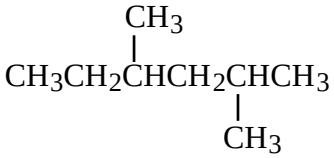
(a)



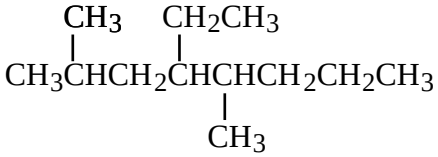
(b)



(c)



(d)



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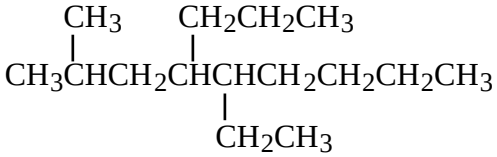
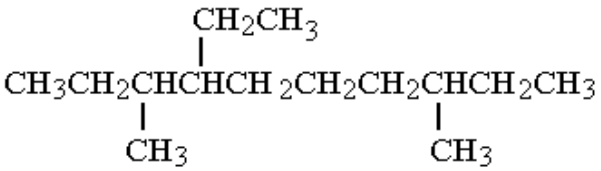
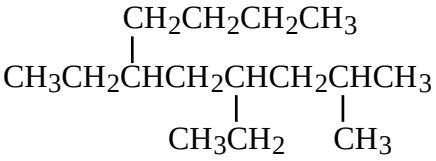


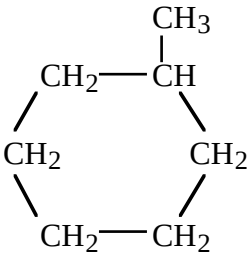
(f)



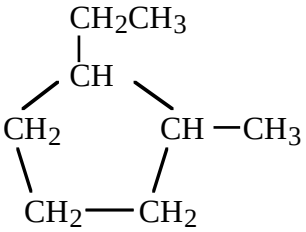
(g)



(h)



(i)



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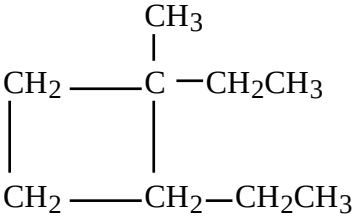

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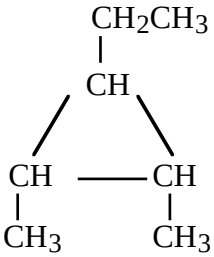


(2) Draw the following alkanes.

(a) 2-Methylpropane

(b) 3-Ethyl-2-methylhexane

(c) 2,2-Dimethylbutane

(d) 3-Ethyl-2,5-dimethylheptane

(e) 3,3,5-Trimethyloctane

(f) 5-Butyl-2,3,6-trimethyldecane

(g) 3-Ethyl-2-methyl-5,6-dipropylnonane

(h) 1-Ethylcyclopropane

(i) 1-Propyl-2,3-dimethylcyclobutane

(j) 1,2-Diethyl-3-methylcyclopentane

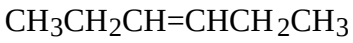
(k) 1,3-Dimethylcyclohexane

(3) Name and draw the five structural isomers of C_6H_{14}.

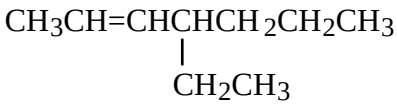
II. Alkenes

(1) Name the following alkenes.

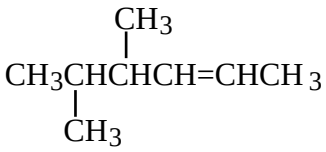
(a)



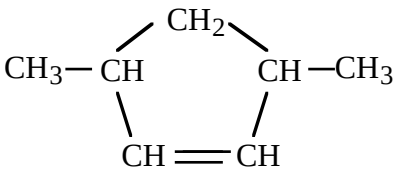
(b)



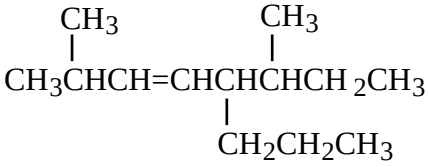
(c)



(d)



(e)



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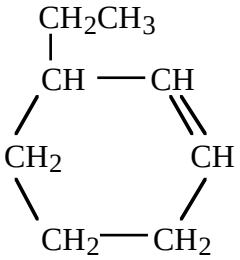


(2) Draw the following alkenes.

(a) 2-Methylpropene

(b) 3-Ethyl-4-methyl-2-pentene

(c) 3-Ethyl-2,4-dimethyl-3-heptene

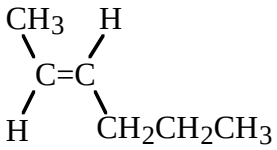
(d) 1-methylcyclopentene

(e) 6-Ethyl-3,3-dimethyl-4-nonene

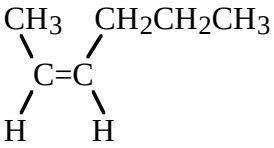
(f) 3-Ethyl-4,5-dimethylcyclohexene

(3) (a) Name the two stereoisomers of 2-hexene.

#1



#2



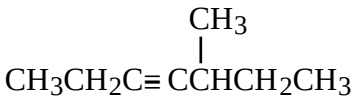
(b) Name and draw the two stereoisomers of 3-hexene.

III. Alkynes

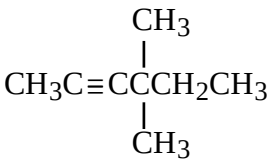
(1) Name the following alkynes.

(a) $CH_2C{\equiv}CCH_2CH_3$

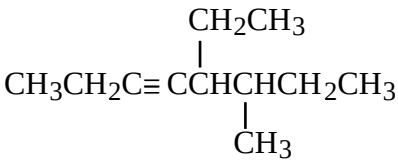
(b)



(c)



(d)



(2) Draw the following alkynes.

(a) 4-Ethyl-2-heptyne

(c) 2,5,6-Trimethyl-3-octyne

(b) 3-Ethyl-5-methyl-1-hexyne

(d) 3,8-Dimethyl-5-decyne

Answers:

I. Alkanes

(1) (a) 3-Methylhexane

(b) 3-Ethyl-4-methylheptane

(c) 2,4-Dimethylhexane

(d) 4-Ethyl-2,5-dimethyloctane

(e) 5-Ethyl-2-methyl-4-propylnonane

(f) 4-Ethyl-3,8-dimethyldecane

(g) 4,6-Diethyl-2-methyldecane

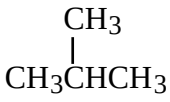
(h) 1-Methylcyclohexane

(i) 1-Ethyl-2-methylcyclopentane

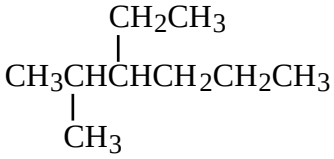
(j) 1,2-Diethyl-1-methylcyclobutane

(k) 1-Ethyl-2,3-dimethylcyclopropane

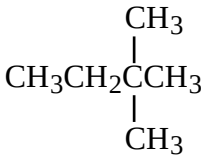
(2) (a)



(b)



(c)



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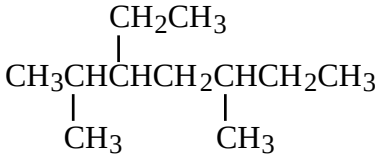

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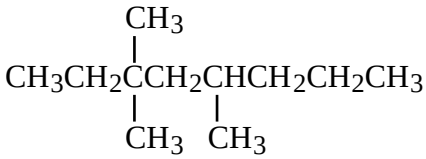
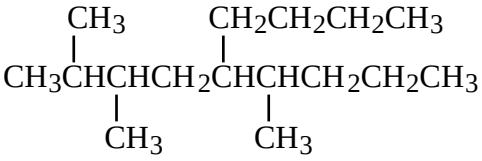


(f)



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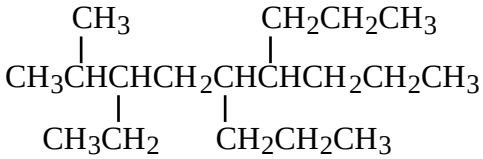

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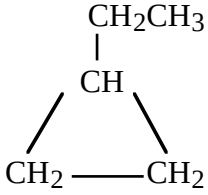

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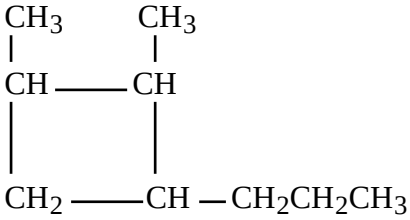

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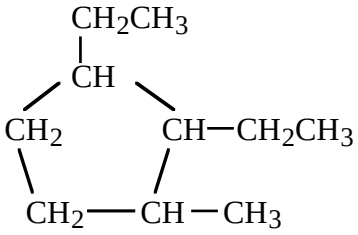
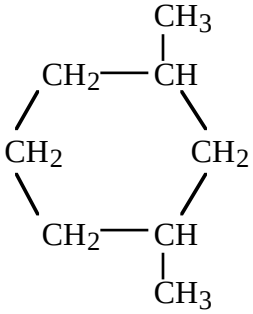


(k)

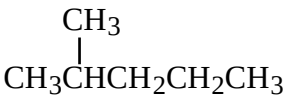


(3)

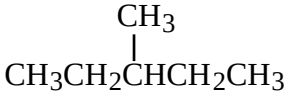
1. Hexane

$CH_3CH_2CH_2CH_2CH_2\ CH_3$

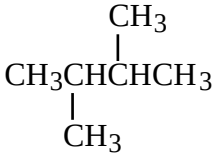
2. 2-Methylpentane



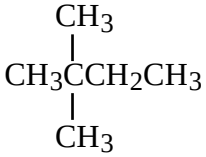
3. 3-Methylpentane



4. 2,3-Dimethylbutane



5. 2,2-Dimethylbutane



II. Alkenes

(1) (a) 3-hexene

(b) 4-Ethyl-2-heptene

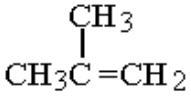
(c) 4,5-Dimethyl-2-hexene

(d) 3,5-Dimethylcyclopentene

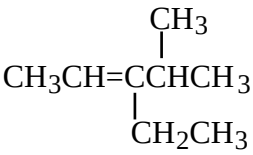
(e) 2,6-Dimethyl-5-propyl-3-octene

(f) 3-Ethylcyclohexene

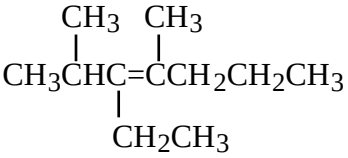
(2)(a)



(b)



(c)



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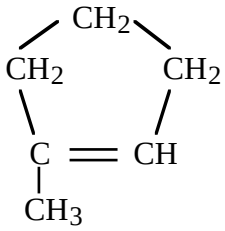

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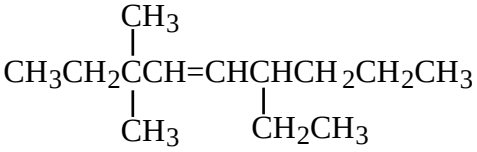

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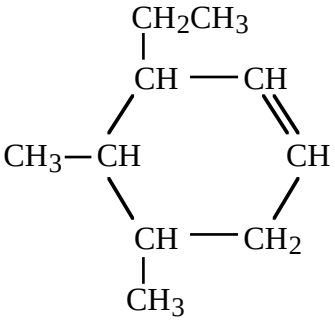
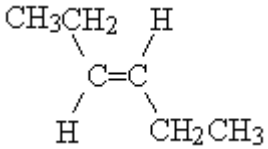


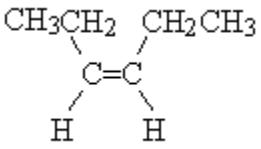
(3) (a) #1: trans-2-hexene (or (E)-2-hexene)

#2: cis-2-hexene (or (Z)-2-hexene)

(b) trans-3-hexene (or (E)-3-hexene)



cis-3-hexene (or (Z)-3-hexene)



III. Alkynes

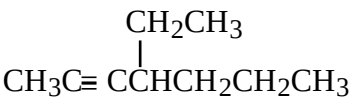
(1) (a) 2-pentyne

(b) 5-Methyl-3-heptyne

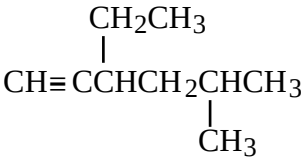
(c) 4,4-Dimethyl-2-hexyne

(d) 5-Ethyl-6-methyl-3-octyne

(a)



(b)



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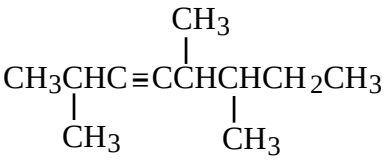

(d)