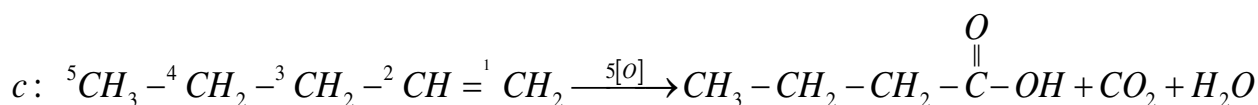
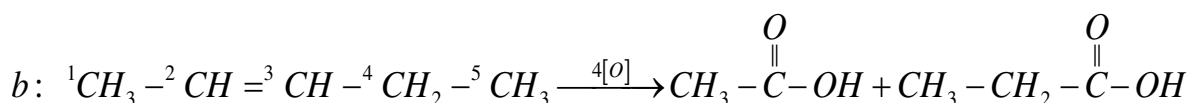
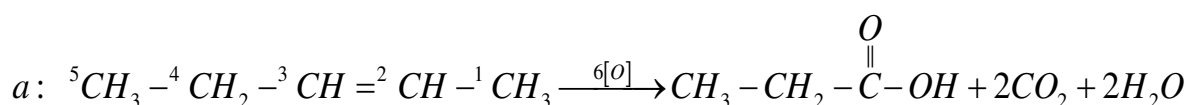
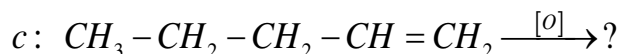
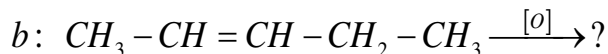
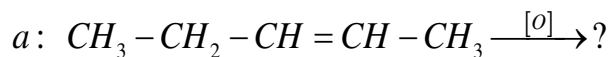


## حل سوالات فعالیت‌های فصل پنجم کیمیای صنف دوازدهم

**فعالیت اول -** محصول تعامل اکسیدیشن محتاطانه الکین‌های ذیل را توسط اکسیدانت‌های قوی، توسط معادله‌ی کیمیای توضیح بدارید.

**جواب:**

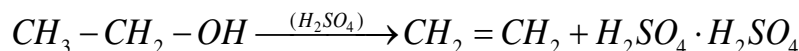


**فعالیت دوم -** از ۹/۲ گرام ایتایل الکول، ایتلین حاصل گردیده است؛

**الف:** چند مول ایتلین حاصل گردیده است؟

**ب:** چند لیتر هایدروجن برای هایدروجنیشن اینلین حاصل گردیده است؟

**الف:**



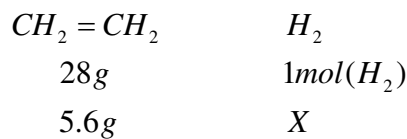
$$\begin{array}{cc} 46g & 28g \end{array}$$

$$\begin{array}{cc} 9.2g & m \end{array}$$

$$m = \frac{9.2g \cdot 28g}{46g} = 5.6g$$

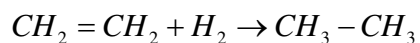


$$n = \frac{5.6g \cdot 1mol}{28g} = 0.2mol$$



$$X = \frac{5.6g \cdot 1mol}{28g} = 0.2mol$$

ب:

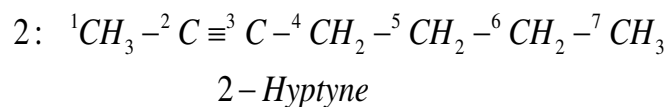
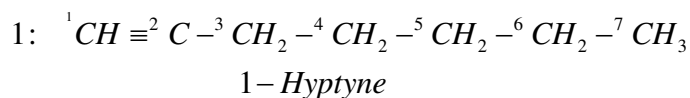


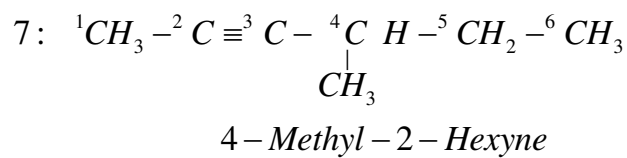
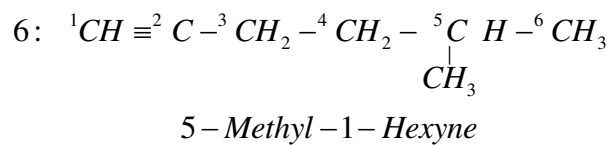
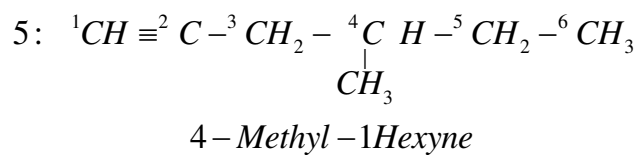
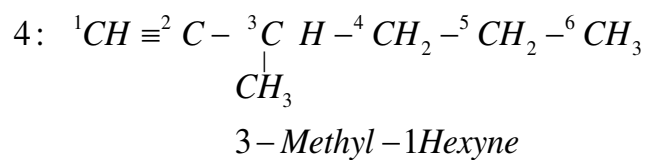
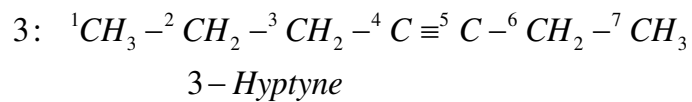
$$v = \frac{0.2mol \cdot 22.4l}{1mol} = 4.48l$$

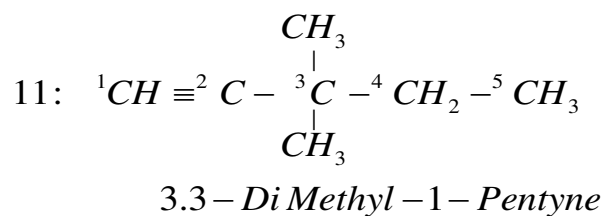
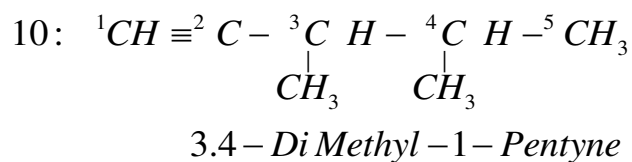
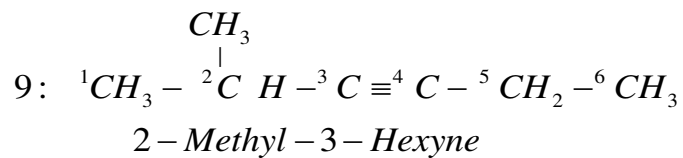
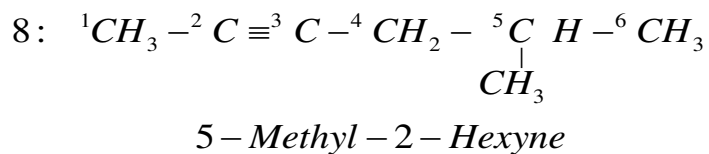
فعالیت سوم - مرکباتی دارای فورمول‌های مالیکولی جمعی  $C_5H_8$  ،  $C_6H_{10}$  ،  $C_7H_{12}$  بوده، ایزومیری‌های ساختمانی و موقعیت رابطه سه گانه را در آن‌ها تحریر نمایید.

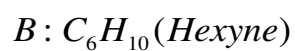
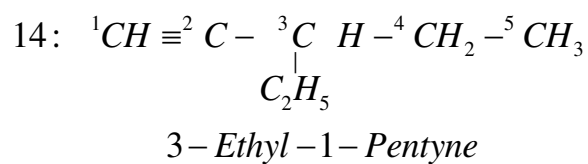
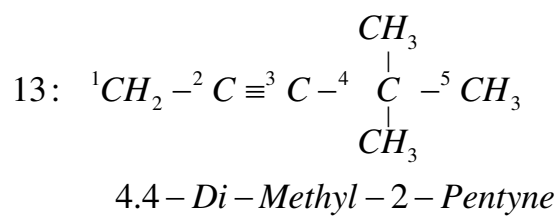
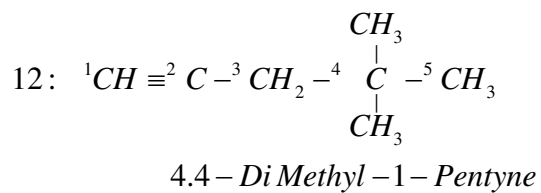
جواب:

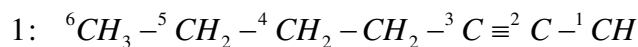
A:  $C_7H_{12}$  (Heptyne)



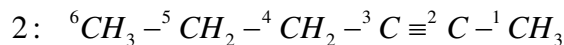




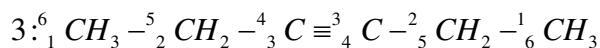




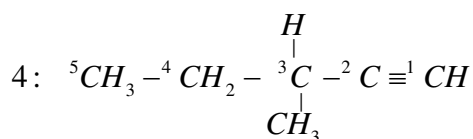
1-Hexyne



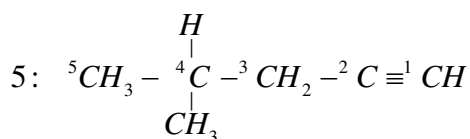
2-Hexyne



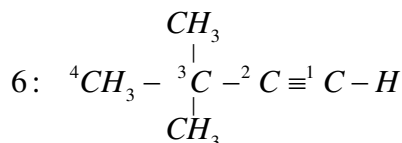
3-Hexyne



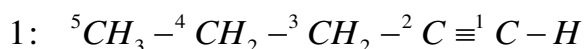
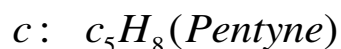
3-Methyl-1-Pentyne



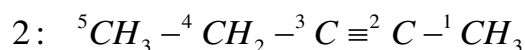
4-Methyl-1-Pentyne



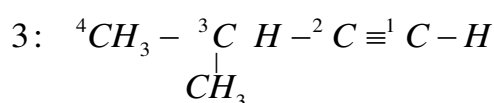
3,3-Dimethyl-1-Butyne



1-Pentyne



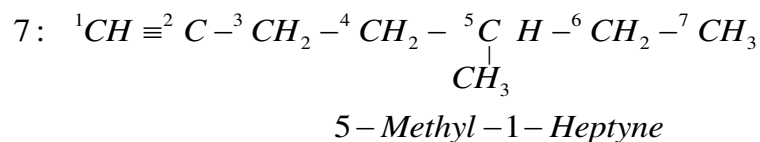
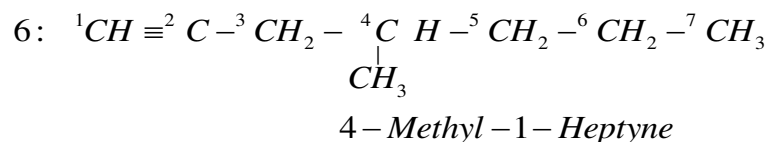
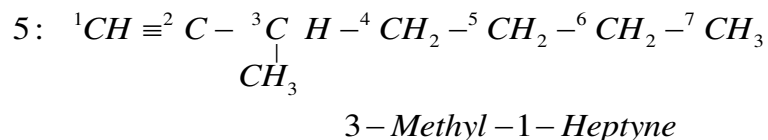
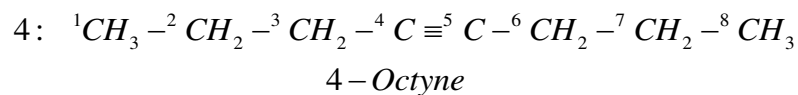
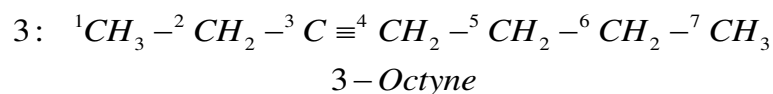
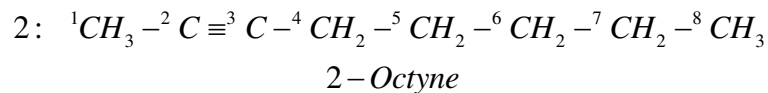
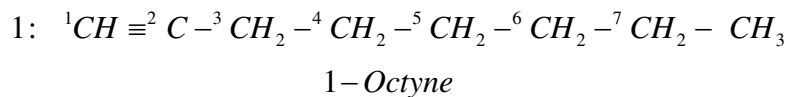
2-Pentyne

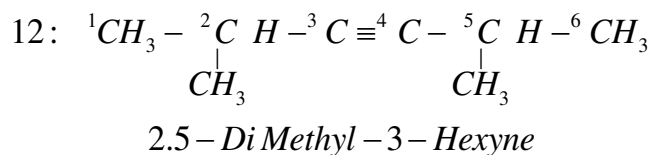
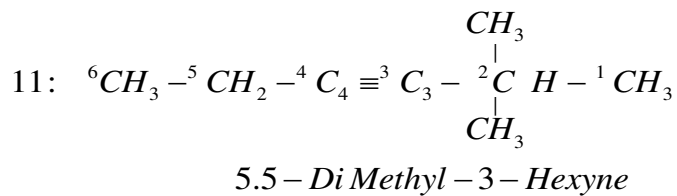
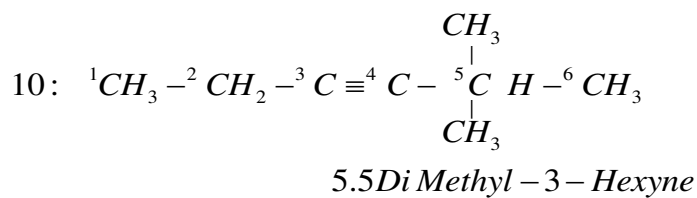
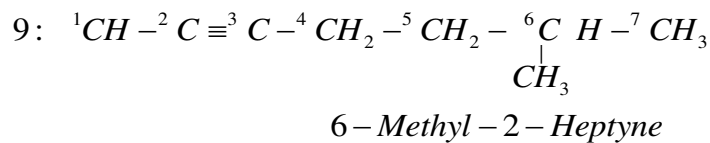
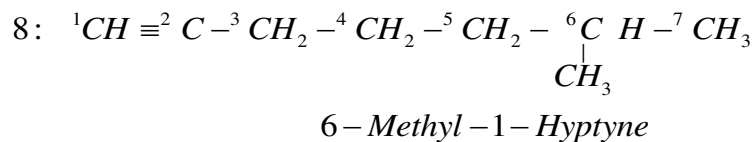


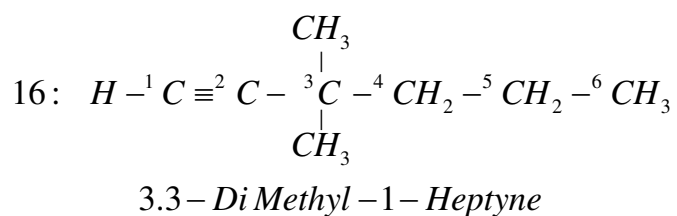
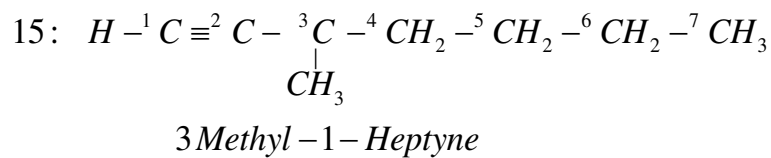
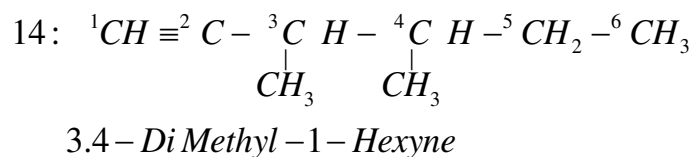
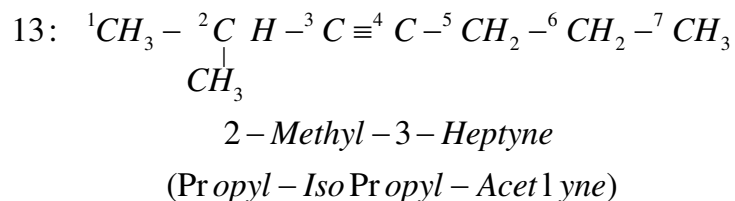
3-Methyl-1-butyne

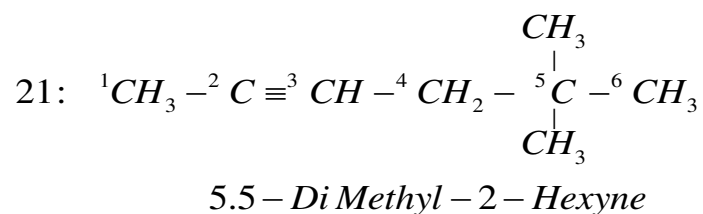
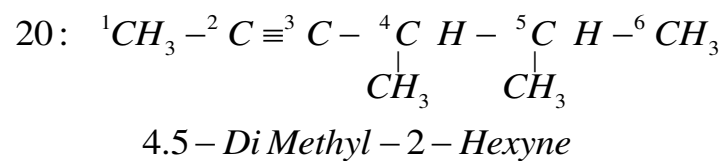
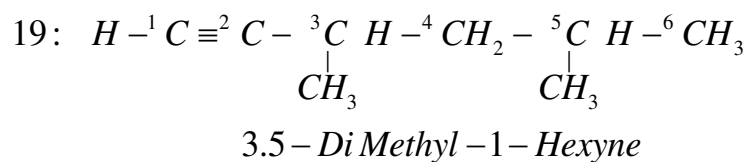
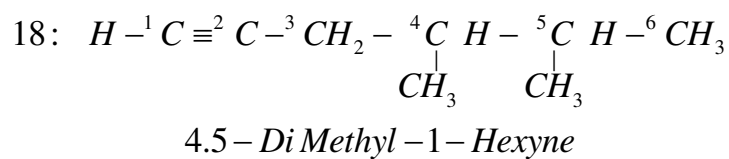
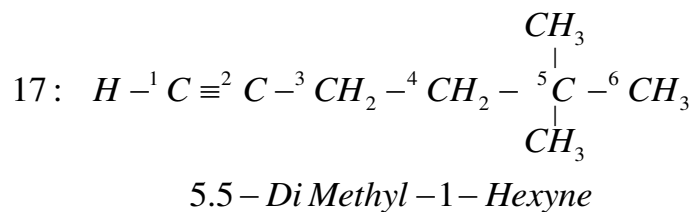
فعالیت چهارم - ایزومیری مرکب دارای فورمول جمعی  $C_8H_{14}$  را تحریر و به طریقه اشتقاقی نامگذاری نمایید.

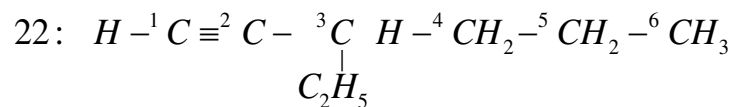
جواب: مرکب متذکره عبارت از اکتاین بوده و دارای ۲۶ ایزومیر می‌باشد که ذیلا هر یک را رسم و نامگذاری می‌گردد:



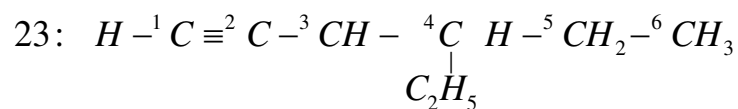




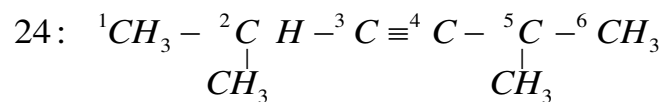




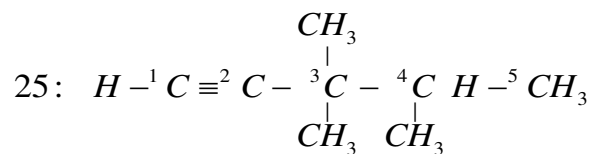
*3-Ethyl-1-Hexyne*



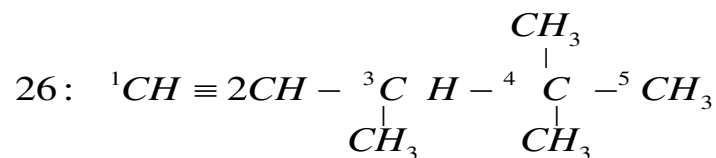
*4Ethyl-1-Hexyne*



*2.5-Di Methyl-3-Hexyne*



*3.3.4-tri Methyl-2-Pentyne*



*3.4.4-tri Methyl-1-Pentyne*

فعالیت پنجم - مرکباتی دارای فورمول‌های ذیل را به اساس IUPAC نامگذاری نمایید:

الف:

- |                                                                                      |                    |
|--------------------------------------------------------------------------------------|--------------------|
| 1: ${}^1CH \equiv {}^2C - {}^3CH_2 - {}^4CH_3$                                       | 1-Butyne           |
| 2: ${}^1CH_3 - {}^2C \equiv {}^3C - {}^4CH_3$                                        | 2-Butyne           |
| 3: ${}^1CH_3 - {}^2C \equiv {}^3C - {}^4CH_2 - {}^5CH_2 - {}^6CH_3$                  | 3-Hexyne           |
| 4: ${}^1CH_3 - {}^2C \equiv {}^3C - \underset{\substack{  \\ CH_3}}{^4C} - {}^5CH_3$ | 4-Methyl-2-Pentyne |

ب: فورمول‌های مشرح مرکبات ذیل را تحریر نمایید:

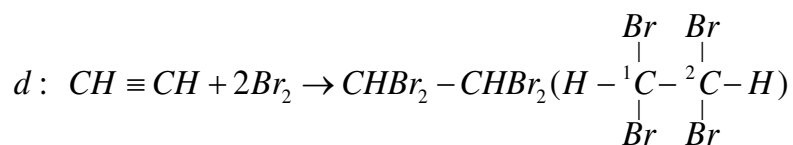
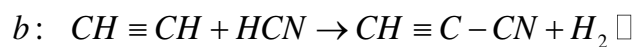
- 1: 4,4-Dimethyl-1-Pentyne
- 2: 4-Methyl-2-Pentyne
- 3: 3-Methyl-2-Hexyne
- 4: 3,3-Difluoro-1-butyne

جواب:

- 1:  ${}^1CH \equiv {}^2C - {}^3CH_2 - \underset{\substack{| \\ CH_3}}{^4C} - {}^5CH_3$
- 2:  ${}^1CH_3 - {}^2C \equiv {}^3C - \underset{\substack{| \\ H}}{^4C} - {}^5CH_3$
- 3:  ${}^1CH_3 - {}^2CH = \underset{\substack{| \\ CH_3}}{^3C} - {}^4C \equiv {}^5C - {}^6CH_3$
- 4:  ${}^1CH \equiv {}^2C - \underset{\substack{| \\ F}}{^3C} - {}^4CH_3$

فعالیت ششم – معادلات تعاملات زیر را تکمیل نمایید:

جواب: البته تکمیل معادله در خود آن قرار ذیل حل گردیده است:



1.1.2.2 – Tetra Bromo Ethane