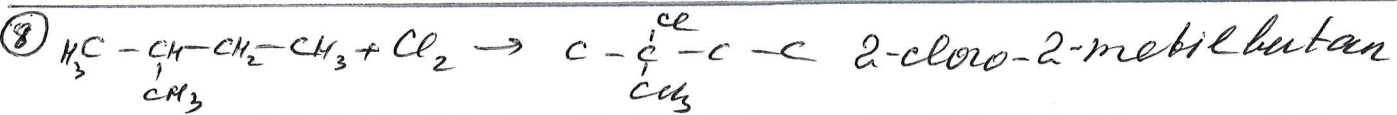
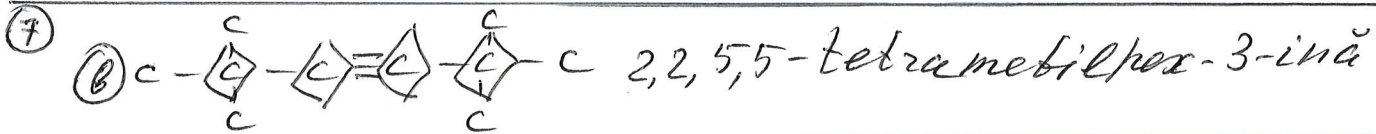
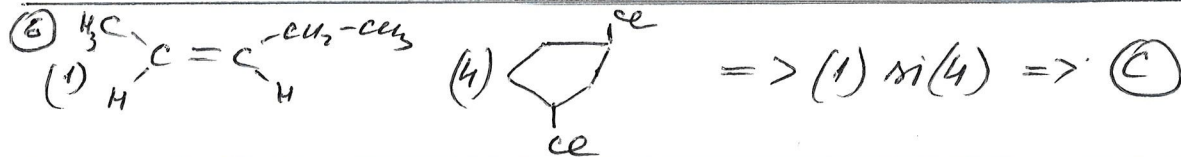
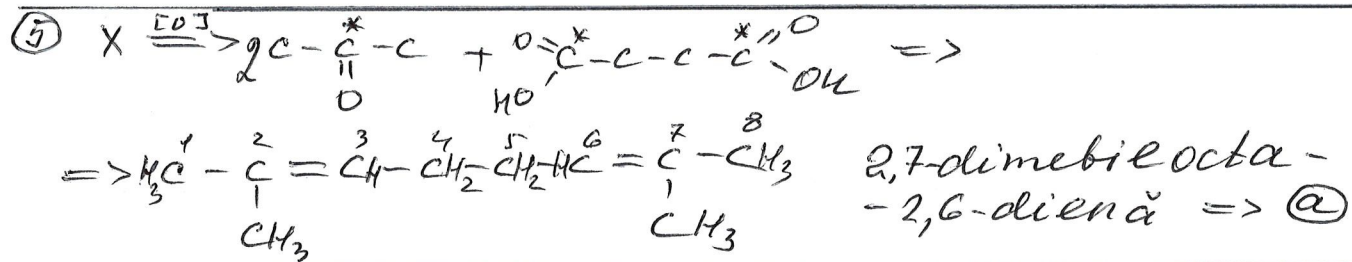
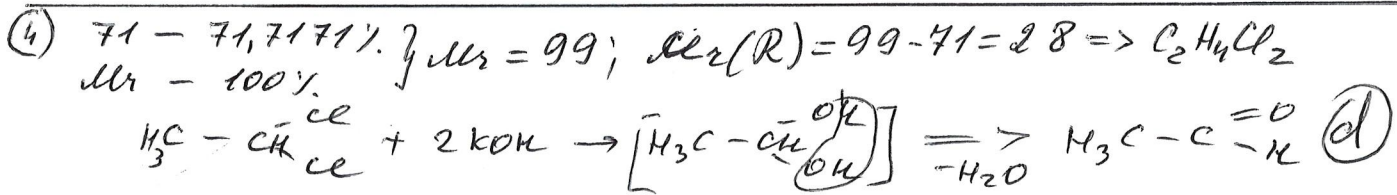
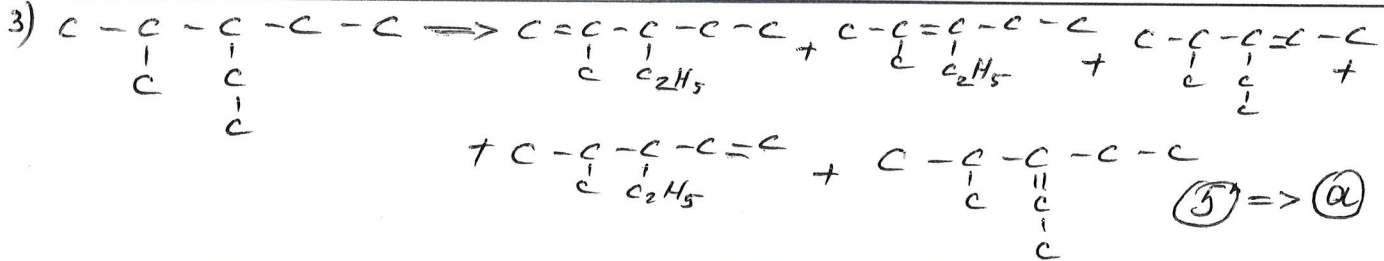
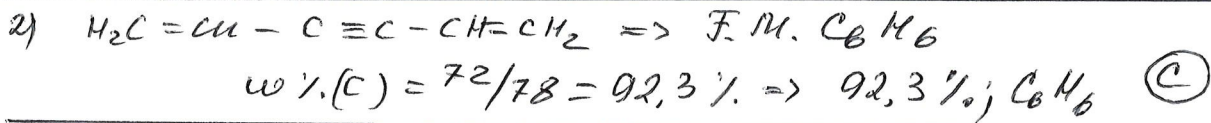
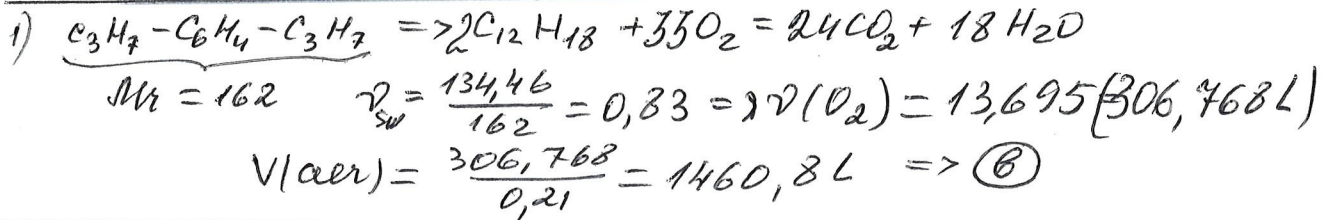
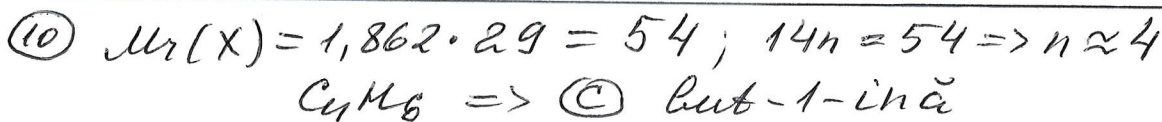


Clasa 11 Test



9) \textcircled{c} \textcircled{d} nu decolorează \textcircled{c}



- 1b 2c 3a 4d 5a 6c 7b 8b 9c 10c

Clasa 11 Problema 1

① Gazul (Y) \Rightarrow conține doar carboni primari \Rightarrow H₃C-CH₃ etan (1p) (1p)

② Lichidul (X) \Rightarrow doar carboni sp² hibridi \Rightarrow benzen (6) (1p) (1p)

③ Dacă (X) poate fi obținut din (B) într-o etapă \Rightarrow (B) este etina HC≡CH (1p) (1p)

④ Dacă (B) se obține la piroliza comp. principal al gazului natural (CH₄) \Rightarrow confirmăm că este HC≡CH

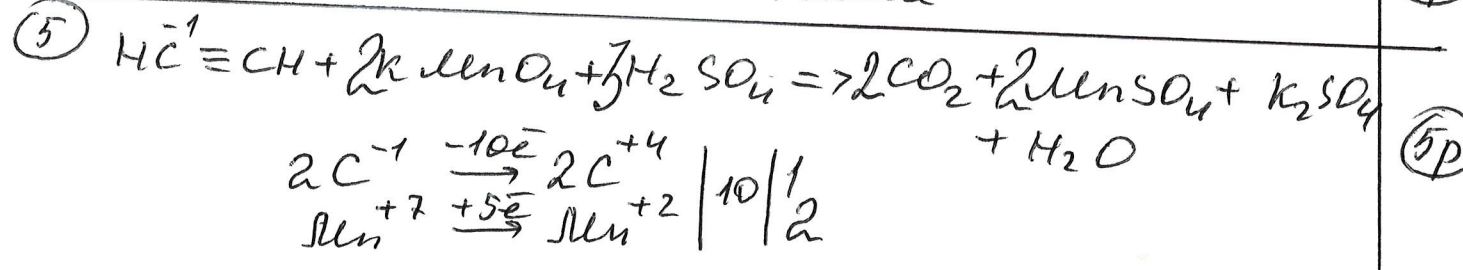
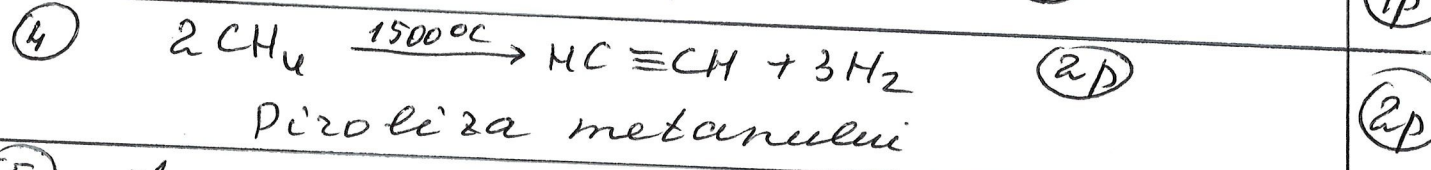
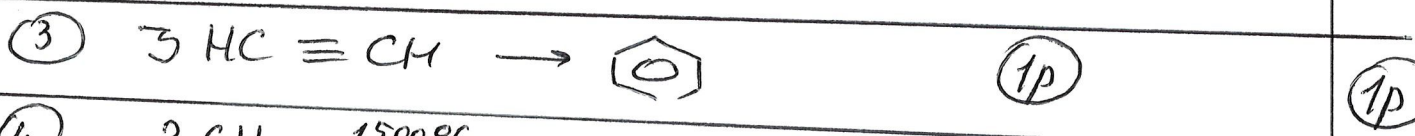
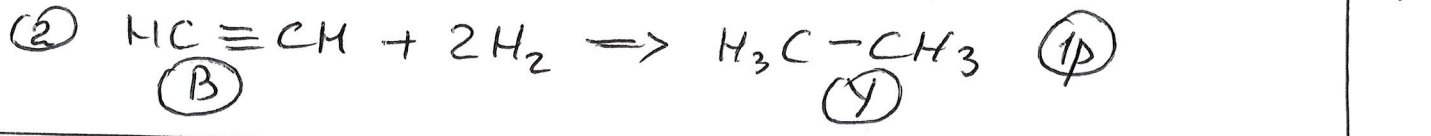
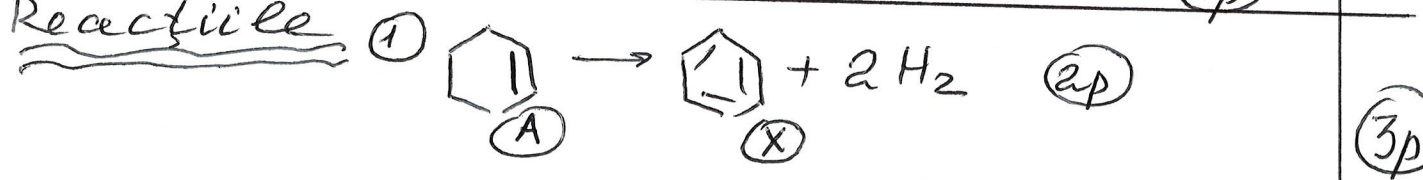
⑤ Nici (X) (6); nici Y (CH₃-CH₃) nu pot fi oxidati cu sol KMnO₄

⑥ • HC≡CH la oxidare cu KMnO₄/H⁺ \Rightarrow CO₂, deci (A) $\xrightarrow{[O]}$ D

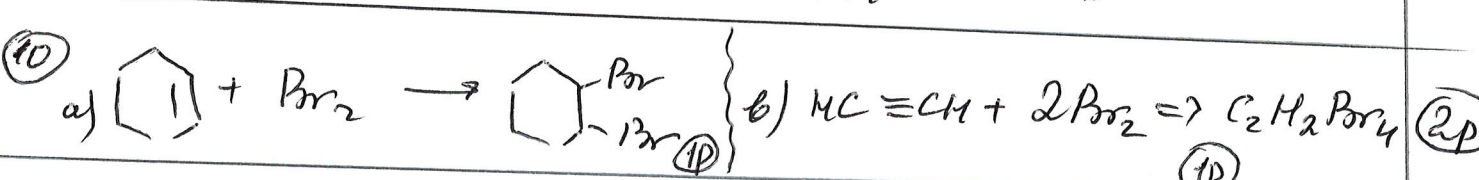
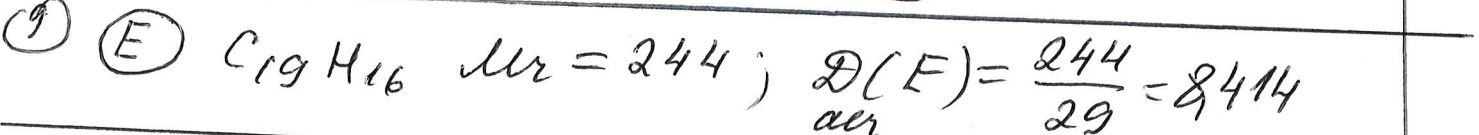
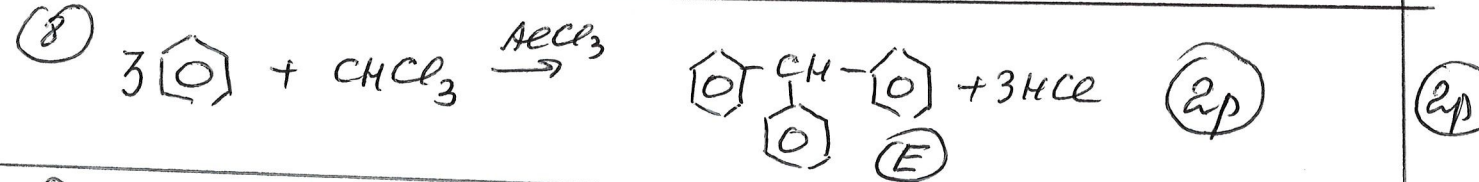
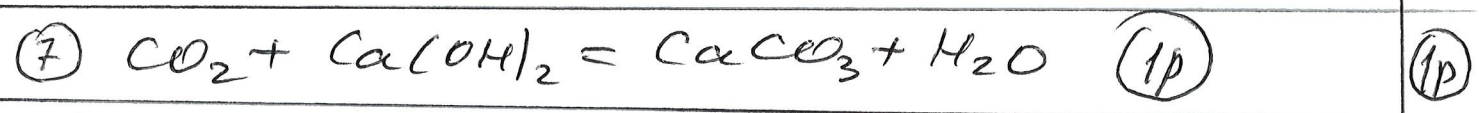
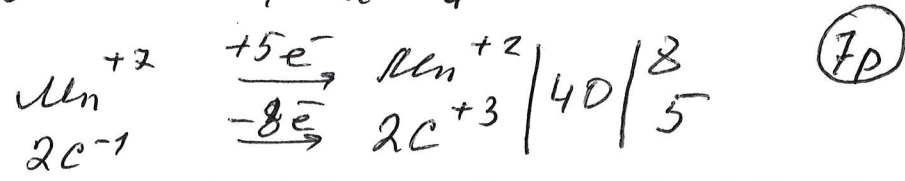
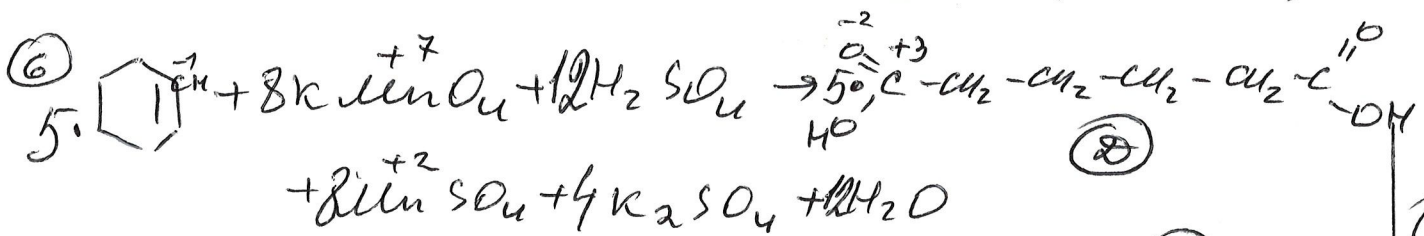
• D \Rightarrow 49,315% C; 43,836% O; 6,849% H \Rightarrow C_xH_yO_z
 $\nu_C = 4,1095$; $\nu_O = 2,745$; $\nu_H = 6,849$ (4p)

$x:y:z = \nu_C:\nu_H:\nu_O = 1,50:9,5:1 \Rightarrow 6:10:4 \Rightarrow$
C₆H₁₀O₄ (D) este un acid dicarbox. (4p)

Reacțiile



clasa 11 Problema 1 (contin.)



$v(\text{C}_6\text{H}_{10}) = v(\text{C}_2\text{H}_2) = x \text{ mol}$

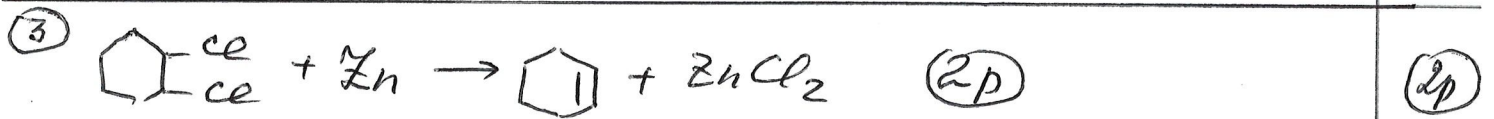
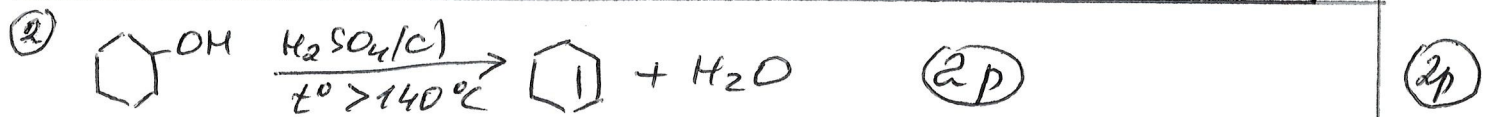
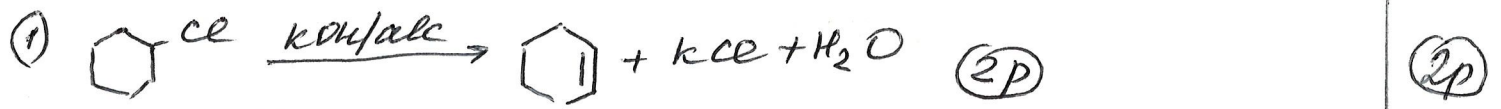
$82x + 26x = 59,4$
 $108x = 59,4 \quad x = 0,55 \text{ mol}$ (1p)

$v_1(\text{Br}_2) = v \text{C}_6\text{H}_{10} = 0,55 \text{ mol}$
 $v_2(\text{Br}_2) = 2 \cdot v \text{C}_2\text{H}_2 = 0,55 \cdot 2 = 1,1$ } $v_t = 1,65 \text{ mol}$ (1p)

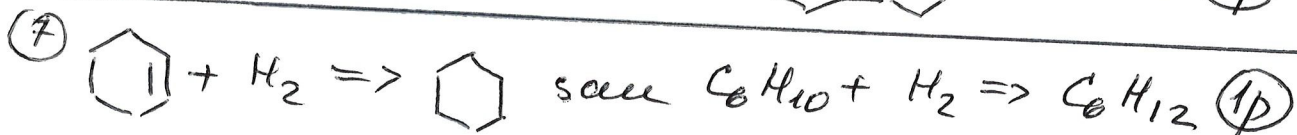
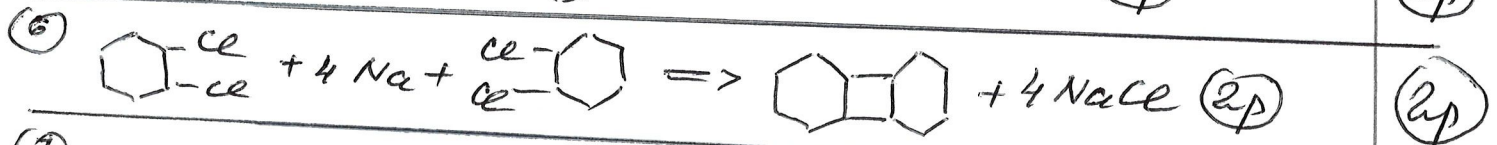
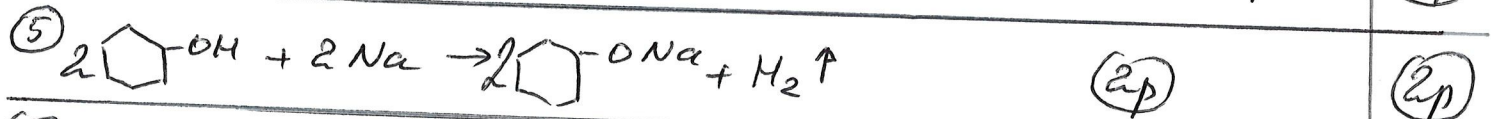
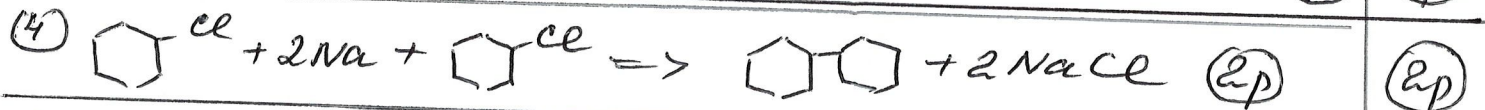
$V_{\text{sol}} = \frac{v}{c_m} = \frac{1,65}{0,83} = 1,99 \text{ l.}$ (1p)

Total: 33p

clasa 11. Problema 2



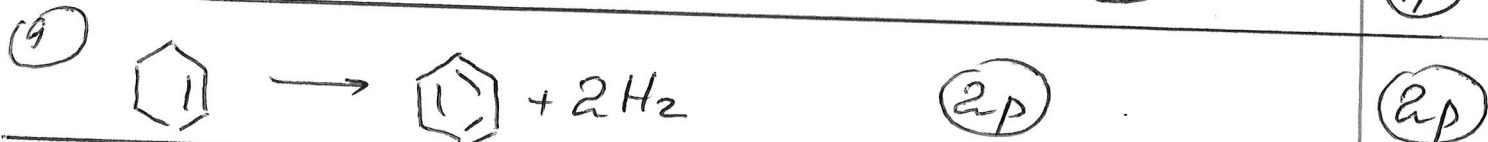
\Rightarrow Hidrocarbura W este ciclohexena (1p) (1p)



$v(\text{C}_6\text{H}_{10}) = \frac{35,5}{82} = 0,433 \Rightarrow v(\text{H}_2) = 0,433$ (1p) (3p)

$V(\text{H}_2) \text{ c.n.} = 0,433 \cdot 22,4 = 9,7 \text{ l}$ (1p)

⑧ $V_1 = \frac{P_0 V_0 \cdot T_1}{P_1 T_0} = \frac{1 \cdot 9,7 \cdot 330}{123 \cdot 273} = 0,0953 \text{ l}$ (1p) (1p)

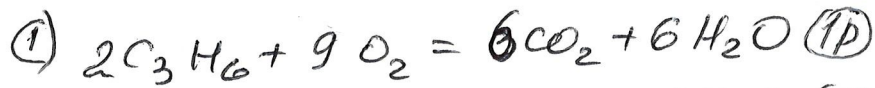


⑩ $v(\text{C}_6\text{H}_{10}) = 0,433 \Rightarrow v(\text{H}_2) = 0,866$ (1p)

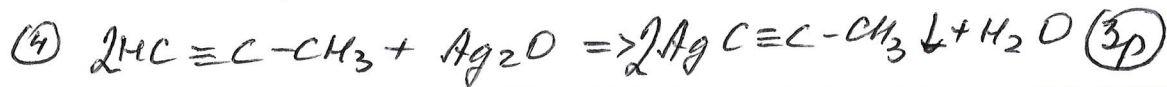
$V(\text{H}_2)_{\text{max.}} = 0,866 \cdot 22,4 = 19,398 \approx 19,4 \text{ l}$ (1p) (2p)

Total: 21p

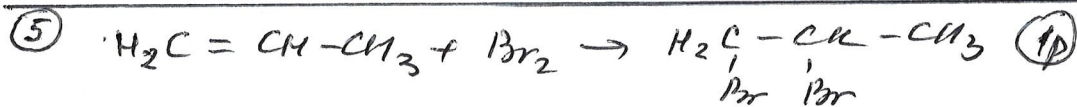
clasa 11 Problema 5



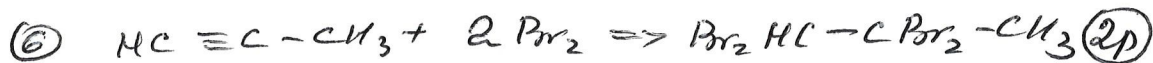
(3p)



(3p)



(3p)



⑦ $v_{total} CO_2 = \frac{87,36}{22,4} = 3,9 \text{ mol}$ (1p)

(1p)

⑧ $v(C \downarrow) = \frac{96,46}{147} = 0,657 \Rightarrow v(C_3H_4) = 0,18$ (0,5p)

(2p)

$m(C_3H_4) = 0,18 \cdot 40 = 7,2 \text{ g}$ (1p)

⑨ $m(Br_2) = 300 \cdot 0,32 = 96 \text{ g} (0,6 \text{ mol})_{total}$ (1p)

(1p)

⑩ $v_1(Br_2) = \frac{0,18 \cdot 2}{1} = 0,36 \text{ mol}$ (0,5p)

(2p)

$v_2(Br_2) = 0,6 - 0,36 = 0,24$ (0,5p)

$v(C_3H_6) = v_2(Br_2) = 0,24 \text{ mol} (10,08 \text{ g})$ (1p)

⑪ $v(CO_2) = 0,18 \cdot 3 = 0,54$ (0,5p) $v(CO_2) = 0,72 \text{ mol}$
din C_3H_4 din C_3H_6 (0,5p)

(3p)

$v(CO_2) = 3,9 - 0,54 - 0,72 = 2,64 \text{ mol}$ (1p)

$v(C_3H_8) = \frac{2,64}{3} = 0,88 \text{ mol} (38,72 \text{ g})$ (1p)

⑫ $v_{total} \text{ hidrocarb.} = 0,88 + 0,24 + 0,18 = 1,3 \text{ mol}$ (1p)

(1p)

⑬ $X\%(C_3H_8) = 0,88/1,3 = 67,7\%$; $X\%(C_3H_6) = \frac{0,24}{1,3} = 18,46\%$

$X\%(C_3H_4) = \frac{0,18}{1,3} = 13,85\%$

(1p)

⑭ $m_{amestec} = 7,2 \text{ g} + 10,08 \text{ g} + 38,72 \text{ g} = 56 \text{ g}$

(1p)

⑮ $w\%(C_3H_4) = 7,2/56 = 12,86\%$; $w\%(C_3H_6) = 10,08/56 = 18\%$

$w\%(C_3H_8) = 38,72/56 = 69,14\%$

(1p)

Total:

22p