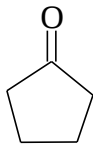
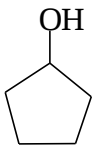
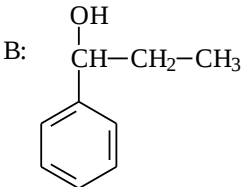
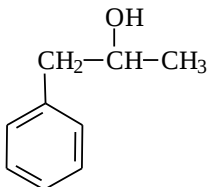
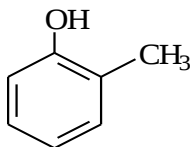
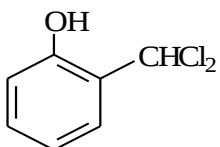
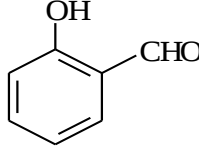
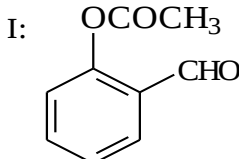
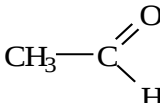
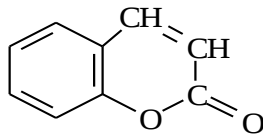
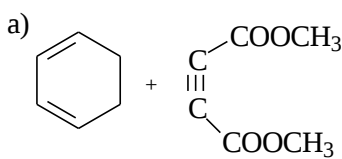
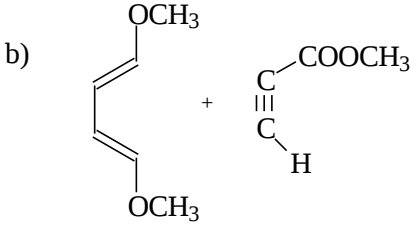
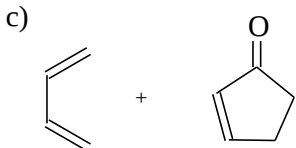
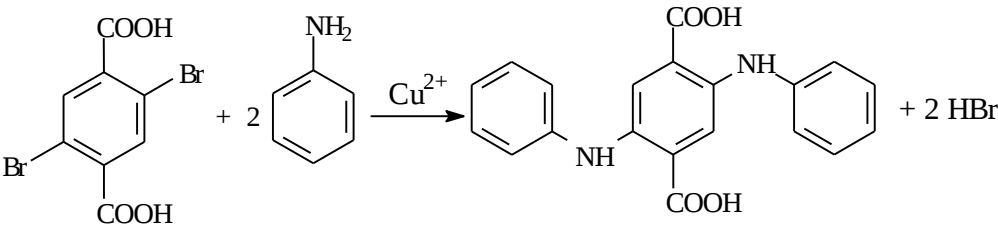
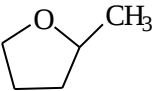


5) R:  T:  1. O₃ 2. H₂/NaBH₄/LiAlH₄ 3. H⁺	2,5 puncte
Subiectul II 25 puncte	
A. N.E.=4; A: $\text{CH}_2=\underset{\text{CH}_3}{\text{C}}-\underset{\text{CH}_2-\text{OH}}{\text{CH}}=\underset{\text{CH}_3}{\text{C}}-\text{CH}_2-\text{C}\equiv\text{CH} + 13 [\text{O}] \longrightarrow \text{O}=\underset{\text{CH}_3}{\text{C}}-\text{COOH} + \begin{array}{c} \text{COOH} \\ \\ \text{C}=\text{O} \\ \\ \text{CH}_2 \\ \\ \text{COOH} \end{array} + 2 \text{CO}_2 + 2 \text{H}_2\text{O}$ A are 2 izomeri geometrici ; B are 2 izomeri optici ; Scrierea corectă a formulelor de structură pentru acid piruvic, acid oxosuccinic; Scriere corectă structură izomer B B:  sau 	9 puncte
B. Scriere corectă structuri A: CH₄; B: CH≡CH; C: C₆H₆; D: C₆H₅-OH; E: CH₃-Cl F:  G:  H:  I:  J:  K: CH₃-COOH L: CH₃COCl 1,2 benzopironă: 	13 puncte
C. Identificare structuri diene și filodiene a)  b)  c) 	3 puncte

d) identificare D 	3 puncte
Subiectul IV..... 30 puncte	
A. a) $[\alpha] = \frac{100 \times \alpha}{l \times c}$; $[\alpha] = -13,5^\circ$	7 puncte
b) raport izomer levogir:dextrogir = 7:3	3 puncte
B. a) $M_{(\text{CH}_3\text{-COOAg})} = 167 \text{ g/mol}$; $M_A = 88 \text{ g/mol}$; Identificare A = $\text{C}_5\text{H}_{11}\text{OH}$, structură A = $\text{CH}_3\text{-(CH}_2)_4\text{-OH}$	4 puncte
b) identificare structură B = 2-metil-tetrahidrofuran; scriere ecuație B cu HI $\text{B} + 2 \text{HI} \xrightarrow{-\text{H}_2\text{O}} \text{I-CH}_2\text{-CH}_2\text{-CH}_2\text{-CH(I)-CH}_3$ 	3 puncte
c) 4 ecuații x 2p $\begin{array}{c} \text{H}_2\text{C-COOH} \\ \\ \text{H}_2\text{C-COOH} \end{array} \xrightarrow{-\text{H}_2\text{O}} \begin{array}{c} \text{H}_2\text{C-CO} \\ \quad \diagup \quad \diagdown \\ \text{H}_2\text{C-CO} \quad \text{O} \end{array} \xrightarrow[\text{-H}_2\text{O}]{+\text{NH}_3} \begin{array}{c} \text{H}_2\text{C-CO} \\ \quad \diagup \quad \diagdown \\ \text{H}_2\text{C-CO} \quad \text{NH} \end{array} \xrightarrow{+\text{Br}_2}$ $\longrightarrow \begin{array}{c} \text{H}_2\text{C-CO} \\ \quad \diagup \quad \diagdown \\ \text{H}_2\text{C-CO} \quad \text{N-Br} \end{array} \xrightarrow{+\text{NaI}} \begin{array}{c} \text{H}_2\text{C-CO} \\ \quad \diagup \quad \diagdown \\ \text{H}_2\text{C-CO} \quad \text{N-I} \end{array} + \text{NaBr}$ NIS	8 puncte
d) ecuația reacției; $\text{CH}_3\text{-CH}_2\text{-CH}_2\text{-CH}_2\text{-OH} + \begin{array}{c} \text{H}_2\text{C-CO} \\ \quad \diagup \quad \diagdown \\ \text{H}_2\text{C-CO} \quad \text{N-I} \end{array} + \text{CH}_3\text{COOAg} \xrightarrow{\text{lumină}}$ $\longrightarrow \text{Structure of tetrahydrofuran} + \text{AgI} + \begin{array}{c} \text{H}_2\text{C-CO} \\ \quad \diagup \quad \diagdown \\ \text{H}_2\text{C-CO} \quad \text{NH} \end{array} + \text{CH}_3\text{COOH}$ $M(\text{C}_4\text{H}_{10}\text{O}) = 74 \text{ g/mol}$; $M(\text{C}_4\text{H}_8\text{O}) = 72 \text{ g/mol}$; $m(\text{C}_4\text{H}_8\text{O}) = 81 \text{ g}$	5 puncte

Barem elaborat de Lavinia Mureșan, profesor la Colegiul Național Alexandru Papiu Ilarian din Târgu Mureș

Notă: Orice variantă corectă de rezolvare se va lua în considerare.