#### Olimpiada de chimie­– etapa judeţeană

**23 februarie 2013**

## BAREM DE EVALUARE - Clasa a XI-a

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| **Subiectul I** .................................................................................................................................... **20 puncte** | |
| 1. a)I- trei atomi de carbon asimetrici; II, IV – câte un atom de carbon asimetric; III- doi atomi de carbon asimetrici;   b) I- opt enantiomeri;  c) II- doi enantiomeri; III- două perechi de enantiomeri; enantiomerie și diastereoizomerie. | 10 puncte |
| **B.**   |  |  |  |  | | --- | --- | --- | --- | | a) | CH3- CH2- CH- C≡ C–CH2–C(CH3)3  |  CH3 | b) | HC≡ C – C = CH – CH= CH2  |  O – C6H5 | | 5 puncte |
| |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | c) |  | d) |  | e) |  | |
| **C.**  a)Bazicitate:   |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | |  | **>** |  | ; |  | **<** |  |   b) Aciditate:   |  |  |  |  | | --- | --- | --- | --- | | CH3 ̶ (CH2)2 ̶ CO ̶ CH2 ̶ CO ̶ CH2 ̶ CH3 | **>** | CH3 ̶ CO ̶ (CH2)4 ̶ CO ̶ CH3; |  |   HOOC ̶ CH2 ̶ COO- **<** HOOC ̶ CH2 ̶ COOH;  c)Număr de izomeri geometrici:   |  |  |  | | --- | --- | --- | | CH3 ̶ CH꞊C꞊CH ̶ CH3 | < | CH3 ̶ CH꞊CH ̶ CH3; | | 5puncte |

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| **Subiectul II** ................................................................................................................................... **25 puncte** | | |
| **A.** Câte 1 punct A, B, C, D, E, F, J’, J câte 2 puncte G, H, I, și miconazol | | 16 puncte |
| **B.** izomer dextro- izomer levo= 82% - 18% = 64%  α = + 18,6 **·** 64 / 100 = + 11,99 0 | | 9 puncte |
| **Subiectul III** ............................................................................................................................... **25 puncte** | | |
| 1. a) C6H14; 3 – metil pentan | | 5 puncte |
| b) 11,73% CH3 ̶ CH2 ̶ CCl(CH3) ̶ CH2 ̶ CH3; 34,43% CH3 ̶ CHCl ̶ CH (CH3) ̶ CH2 ̶ CH3;  7,94% CH3 ̶ CH2 ̶ CH (CH2Cl) ̶ CH2 ̶ CH3; 15,89% CH2Cl ̶ CH2 ̶ CH (CH3) ̶ CH2 ̶ CH3;  30% CH3 ̶ CH2 ̶ CH(CH3) ̶ CH2 ̶ CH3 | | 15 puncte |
| 1. η =14,92% **←**; | | 5 puncte |
| **Subiectul IV**..................................................................................................................................... **30 puncte** | | |
| 1. a) 2 C6H5-OH + CH3-CO-CH3HO - C6H4-C(CH3)2-C6H4-OH + H2O   2,2-(p,p´-dihidroxi-difenil) propan | 2 puncte | |
| b) mfenol pur= 70,75 g (Ct); Cp= 62,4 g fenol; 75,68 g bisfenol; | 4 puncte | |
| c). HO-C6H4-C(CH3)2-C6H4-OH + 2NaOH +Na-O-C6H4-C(CH3)2-C6H4-O-Na+ + 2H2O  0,664 moli NaOH; V= 0,265 L NaOH. | 4 puncte | |
| 1. a) C6H6 C6H5-NO2 C6H5- NH2 H2N-C6H4-SO3H(p)   H2N- C6H4- SO3H(p) +Na-O3S- C6H4- N≡N]+Cl-  C6H5- NH2 + 2 CH3Cl C6H5- N(CH3)2 + 2 HCl | 4 puncte | |
| b) +Na-O3S-C6H4-N≡N]+Cl- + C6H5-N(CH3)2 +Na-O3S-C6H4-N=N-C6H4-N(CH3)2 + HCl  metiloranj | 2 puncte | |
| c)   |  |  |  | | --- | --- | --- | | http://upload.wikimedia.org/wikipedia/commons/5/54/Methyl-orange-2D-skeletal.png |  |  |   forma azoidă - H+  forma chinoidă | 5 puncte | |
| d) 1 moli acid sulfanilic; 1 mol NaNO2; 0,8595moli N,N-dimetilanilina;  mcolorantteoretic= 281,06 g; mcolorantpractic = 278,25 g. | 5 puncte | |
| e) 0,0001 g indicator; 0,306 cm3HCl. | 4 puncte | |

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