|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **D:\Iskola\2018-2019\XXVIII. NMMV\Mappa\gov.png** | C:\Users\admin\Desktop\index.jpg | **D:\Iskola\2018-2019\XXVIII. NMMV\Mappa\Logo-RO-FULL-RGB-1.png** |  | bklogo |

**FABINYI RUDOLF KÉMIA VERSENY**

**SZERVETLEN KÉMIA - XI. OSZTÁLY**

Marosvásárhely, Bolyai Farkas Elméleti Líceum, 2019. május 0-12.

**Javítókulcs**

**I. Feleletválasztásos kérdések: (22,25 p)**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Kérdés** | 1. | 2. | 3. | 4. | 5. | 6. | 7. | 8. | 9. | 10. |
| **Válasz** | **A** | **B, C** | **A, D** | **C** | **C** | **A** | **B, E** | **A, B** | **A, E** | **B** |
| **Kérdés** | 11. | 12. | 13. | 14. | 15. | 16. | 17. | 18. | 19. | 20. |
| **Válasz** | **B** | **C, E** | **D, E** | **A, E** | **B, C** | **A, D** | **D** | **E** | **B** | **B** |

**II. Megfeleltetéses kérdések (5,0 + 6,5 + 3,0 +12,0 p)**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **1.Kérdés** | a | b | c | d | e | f | g | h | i | j |
| **Válasz** | **A** | **B** | **C** | **C** | **D** | **D** | **B** | **D** | **A** | **C** |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **2.Kérdés** | a | b | c | d | e | f | g | h | i | j | k | l | m |
| **Válasz** | **B** | **C** | **D** | **A** | **B** | **E** | **D** | **B** | **C** | **B** | **A** | **E** | **E** |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **3.Kérdés** | a | b | c | d | e | f |
| **Válasz** | **E** | **C** | **A** | **B** | **F** | **D** |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **4.Kérdés** | 1. | 2. | 3. | 4. | 5. | 6. | 7. | 8. |
| **Válasz** | **D** | **L** | **C** | **M** | **H** | **B** | **N** | **G** |
| **Kérdés** | 9. | 10. | 11. | 12. | 13. | 14. | 15. | 16. |
| **Válasz** | **E** | **I** | **P** | **O** | **F** | **A** | **J** | **K** |

**III. Relációanalízis: (15,0 p)**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Kérdés** | 1. | 2. | 3. | 4. | 5. | 6. | 7. | 8. | 9. | 10. | 11. | 12. | 13. | 14. | 15. |
| **Válasz** | **E** | **B** | **D** | **D** | **A** | **C** | **B** | **A** | **B** | **D** | **C** | **B** | **A** | **E** | **C** |

**I. 16**. HOOC-C6H4-OCOCH3 + 3NaOH → CH3COONa + NaOOC-C6H4-ONa

M(aszpirin) = 180 n(aszpirin) = 2 mol n(NaOH) = 2x3 = 6 mol **V = 2 dm3 = 2000 ml old**.

(6,0 p)

**17**. CH3-COOCH3 + NaOH → CH3COONa + CH3OH M(észter) = 74

m(észter) = 0,5 mol n(NaOH) = 0,5 mol = 20 g mo = 100x20/30 = **66,66 g oldat** (4,0 p)

**18**. C6H5-CH2CH2CH3 + 5[O] → C6H5COOH + CH3COOH + H2O

2KMnO4 + 3H2SO4 → K2SO4 + 2MnSO4 + 3H2O + 5[O] M(propilbenzol) = 120

n(KMnO4) = 1,5•2 = 3 mol **V = 3/0,5 = 6 liter**  (6,0 p)

**19**. x mol CnH2n+2 és y mol CnH2n–2 yCnH2n–2 + 2yH2 → yCnH2n+2 x + y = 10 és 2y = 5 x = 7,5 és y = 2,5 M(elegy) = [7,5(14n+2)+2,5(14n-2)]/10 = 14n+1 14n+1 = 32•1,78 n = 4 **75 % C4H10  és 25 % C4H6** (5,5 p)

**20.** CxHyOz + O2 → xCO2 + 0,5yH2O 2x+0,5y = 2+z x = 0,5y x+0,5y = 2

x = 1 y = 2 z = 1 **CH2O** (4,75 p)

*Dr. Donáth-Nagy Gabriella, a versenybizottság elnöke*