



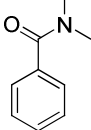
**MINISTERUL EDUCAȚIEI NAȚIONALE**  
**OLIMPIADA NAȚIONALĂ DE CHIMIE**  
**PIATRA-NEAMȚ**  
**31.03. – 06.04. 2013**

**Barem de evaluare și de notare**  
**Proba teoretică**  
**Clasa a X-a**

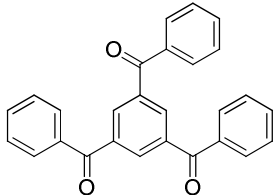
**Subiectul I** (20 de puncte)

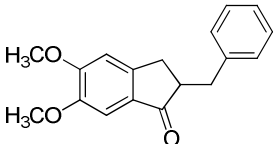
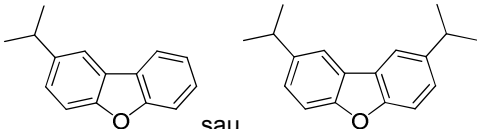
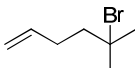
1 A; 2 D; 3 A; 4 C; 5 A; 6 C; 7 B; 8 B; 9 C; 10 A.  
 Fiecare raspuns corect primește 2 puncte

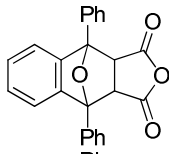
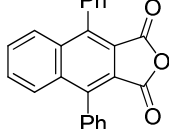
**Subiectul al II-lea** (25 de puncte)

|                |                                                                                              |           |
|----------------|----------------------------------------------------------------------------------------------|-----------|
| <b>A.</b>      | Ecuția reacției chimice                                                                      | 1         |
|                | $n_{\text{inițial}}$ determinat corect – relația matematică                                  | 3         |
|                | $n_{\text{final}}$ determinat corect – relația matematică                                    | 3         |
|                | Calcul corect - propenă                                                                      | 3         |
| <b>PUNCTAJ</b> |                                                                                              | <b>10</b> |
| <b>B.</b>      | <b>Z</b>  | 3         |
|                | <b>X</b>  | 4         |
|                | Ecuția reacției chimice de esterificare                                                      | 1         |
|                | Calcul corect – raport 1:3                                                                   | 7         |
| <b>PUNCTAJ</b> |                                                                                              | <b>15</b> |

**Subiectul al III-lea** (25 de puncte)

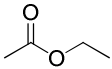
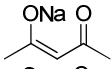
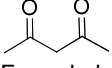
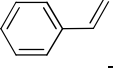
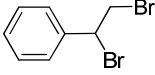
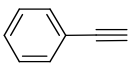
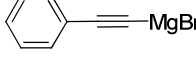
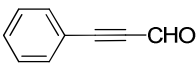
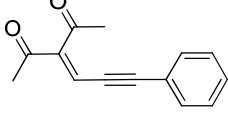
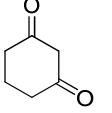
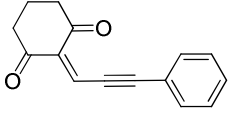
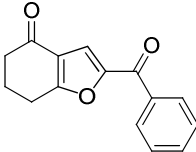
|                      |                                                                                              |                 |          |
|----------------------|----------------------------------------------------------------------------------------------|-----------------|----------|
| <b>A.</b>            | <b>A</b> acetilenă                                                                           | <b>B</b> benzen | 2 x 0,5  |
|                      |           |                 |          |
|                      | <b>C</b>  |                 | 1        |
|                      | benzoilacetilenă                                                                             |                 |          |
|                      | <b>D</b>  |                 | 2        |
|                      | 1,3,5-tribenzoilbenzen                                                                       |                 |          |
|                      | <b>E</b> acetilură monosodică                                                                |                 | 1        |
|                      | <b>F</b> NE = 5: un nucleu aromatic și o legătură dublă C=O, clorură de benzoil              |                 | 1        |
| <b>PUNCTAJ TOTAL</b> |                                                                                              |                 | <b>6</b> |

|                |                                                                                          |          |
|----------------|------------------------------------------------------------------------------------------|----------|
| B.             |         | 3        |
|                |         | 3        |
|                | sau<br> | 3        |
| <b>PUNCTAJ</b> |                                                                                          | <b>9</b> |

|    |         |                                                                                   |    |
|----|---------|-----------------------------------------------------------------------------------|----|
| C. | A       |  | 5  |
|    | B       |  | 5  |
|    | PUNCTAJ |                                                                                   | 10 |

#### Subiectul al IV-lea

(30 de puncte)

|                                                                                       |                                                                                                                        |                                                                                        |       |
|---------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|-------|
| A etanol                                                                              | B etoxid de sodiu                                                                                                      | C acetona                                                                              | 3 x 1 |
| D                                                                                     |                                     |                                                                                        | 2     |
| E                                                                                     |                                     |                                                                                        | 1     |
| F                                                                                     |                                     | G   | 2 x 2 |
| H                                                                                     | Formula brută C <sub>4</sub> H <sub>4</sub> Br,<br>Formula moleculară<br>C <sub>8</sub> H <sub>8</sub> Br <sub>2</sub> |    | 4     |
| I  | J                                   | K  | 3 x 2 |
| L                                                                                     |                                     |                                                                                        | 3     |
| N                                                                                     |                                     |                                                                                        | 2     |
| O                                                                                     |                                     |                                                                                        | 3     |
| P                                                                                     |                                     |                                                                                        | 2     |