



**OLIMPIADA NAȚIONALĂ DE CHIMIE**  
**BUZĂU, 28 aprilie-02 mai 2024**  
**Ediția a LVII-a**

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

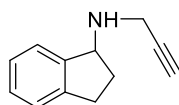
Se punctează orice modalitate de rezolvare corectă a cerințelor.

**Subiectul I** **(20 de puncte)**

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

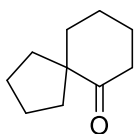
**Subiectul al II-lea** **(25 de puncte)**

- a. notarea valorii NE a compusului **(A)**: NE = 6. (1p)  
b. scrierea formulei de structură a compusului **(C)**: (2p)

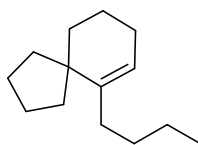


(C)

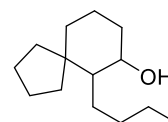
- c. scrierea formulelor de structură ale compușilor **(E)**, **(F)** și **(G)**:



(E)  
(2p)

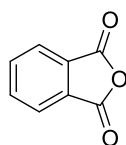


(F)  
(2p)

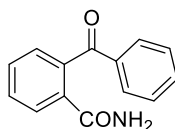


(G)  
(1p)

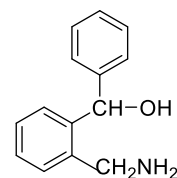
- d. scrierea formulelor de structură ale compușilor **(H)**, **(J)** și **(K)**:



(H)  
(1p)

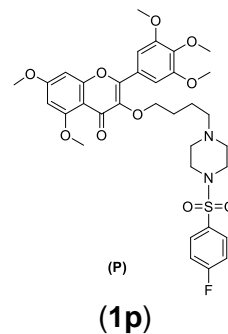
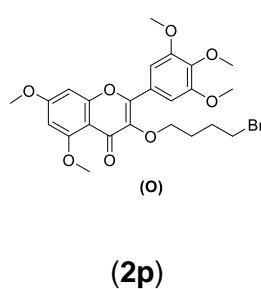
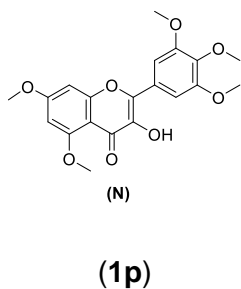
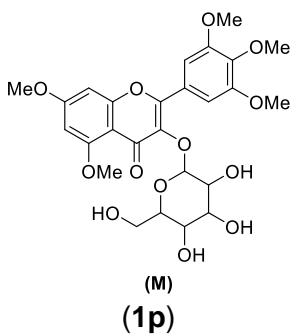


(J)  
(1p)

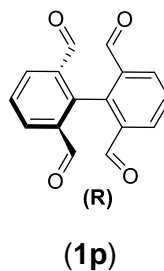
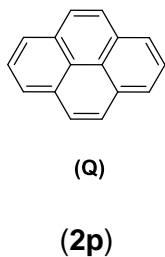


(K)  
(1p)

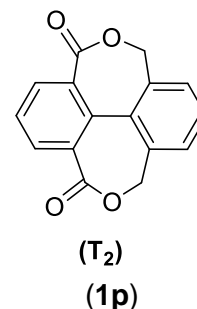
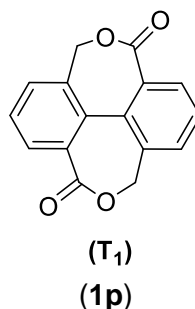
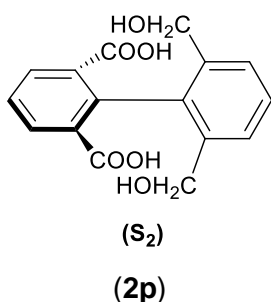
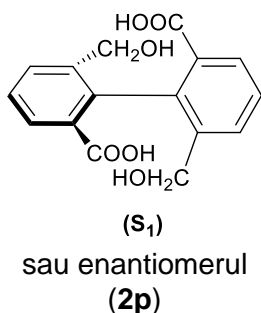
e. scrierea formulelor de structură ale compușilor (M), (N), (O) și (P):



f. scrierea formulelor de structură ale compușilor (Q) și (R):



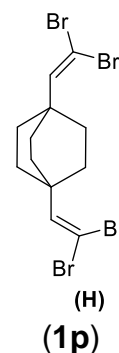
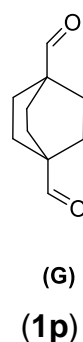
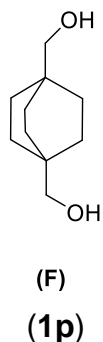
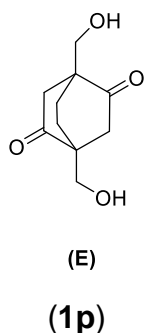
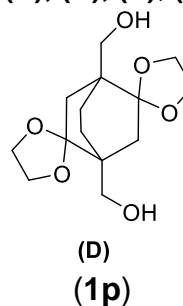
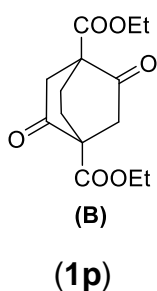
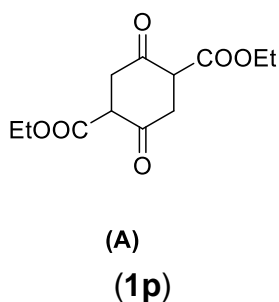
g. scrierea formulelor de structură ale compușilor (S<sub>1</sub>), (S<sub>2</sub>), (T<sub>1</sub>) și (T<sub>2</sub>):



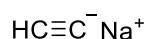
### Subiectul al III-lea

**(25 de puncte)**

Subiectul A. scrierea formulelor de structură ale substanțelor (A), (B), (D), (E), (F), (G) și (H):



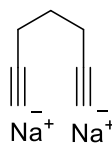
**Subiectul B.** scrierea formulelor de structură ale compușilor (A), (B), (D), (F), (G), (I), (J) și (X).



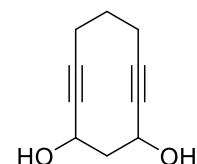
(A)  
(1p)



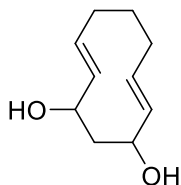
(B)  
(1p)



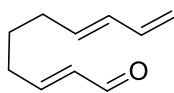
(D)  
(1p)



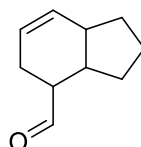
(F)  
(1p)



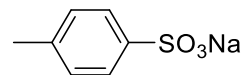
(G)  
(1p)



(I)  
(2p)

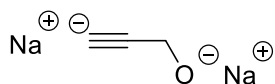


(J)  
(2p)

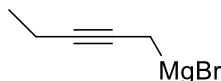


(X)  
(1p)

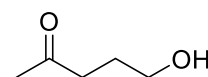
**Subiectul C.** scrierea formulelor de structură ale compușilor (A), (B), (D), (F), (H) și (I).



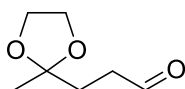
(A)  
(1p)



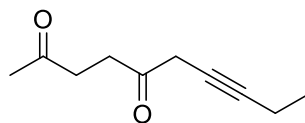
(B)  
(2p)



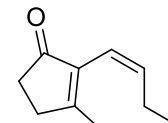
(D)  
(1p)



(F)  
(1p)



(H)  
(1p)



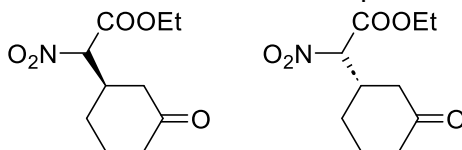
(I)  
(2p)

### Subiectul al IV-lea

(30 de puncte)

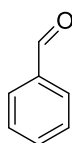
#### Subiectul A.

a. scrierea formulelor de structură ale stereozomerilor compusului (A): (2 x 1p)



b. determinarea procentului de enantiomer dextrogir și levogir în proba compusului (A): (2 p)  
90% dextrogir, 10 % levogir

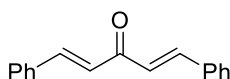
c. scrierea formulelor de structură ale compușilor (B), (D), (E) și (J)



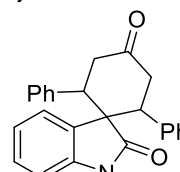
(B)  
(0.5p)



(D)  
(0.5p)

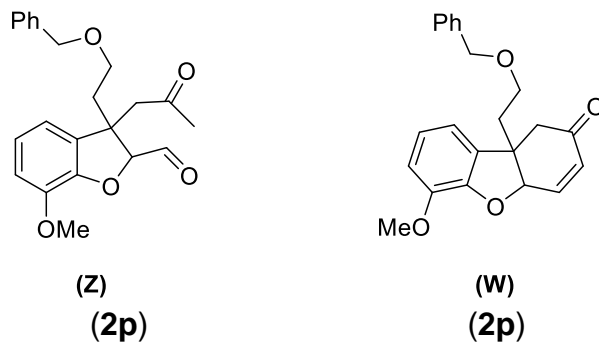
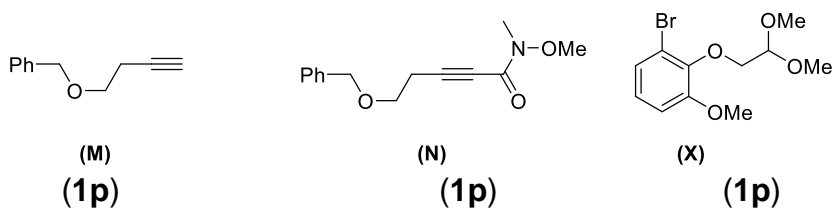


(E)  
(2p)



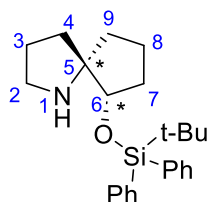
(J)  
(2p)

d. scrierea formulelor de structură ale compușilor **(M)**, **(N)**, **(X)**, **(Z)**, **(W)**.



e. notarea numărului de stereoizomeri ai compusului **(J)** și **(Z)**: **(2 x 1p)**  
**(J)** - 3 stereoizomeri; **(Z)** - 4 stereoizomeri;

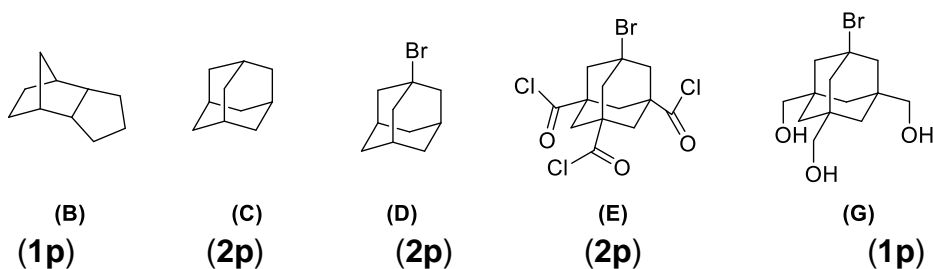
f. indicarea centrelor chirale **(2 x 0.5p)**



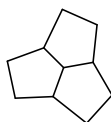
atribuirea configurației: 5(S), 6(S): **(2 x 0.5p)**

### Subiectul B.

a. scrierea formulelor de structură ale substanțelor **(B)**, **(C)**, **(D)**, **(E)**, **(G)**.



b. scrierea formulei de structură a izomerului compusului **(C)**. **(2p)**



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