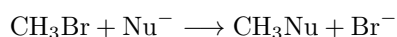


JEE Mains 2026 22 Jan Shift 1 Question Paper(Memory Based)

1. Which of the following is the correct order of bond length?

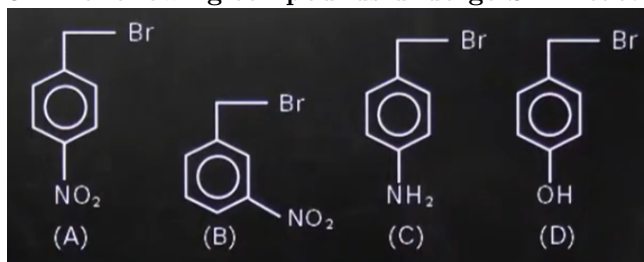
- (A) $C-H < C \equiv N < C=O < C-O$
(B) $C \equiv N < C-H < C-O < C=O$
(C) $C-H < C \equiv N < C-O < C=O$
(D) $C-O < C \equiv N < C=O < C-H$

2. Which of the following is the correct order of nucleophilic nature for the following reaction?



- (1) $HO^- > PhO^- > CH_3COO^- > ClO_4^-$
(2) $PhO^- > HO^- > CH_3COO^- > ClO_4^-$
(3) $CH_3COO^- > HO^- > PhO^- > ClO_4^-$
(4) $HO^- > ClO_4^- > PhO^- > CH_3COO^-$

3. The following compounds undergo SN_2 reaction. What is the correct order of SN_2 reactivity?



- (1) $D > C > B > A$
(2) $A > B > D > C$
(3) $A > B > C > D$
(4) $D > A > C > B$

4. Let $A = \begin{bmatrix} 3 & -4 \\ 1 & -1 \end{bmatrix}$ and $B = \begin{bmatrix} 29 & 49 \\ 1 & 2 \end{bmatrix}$. If $(A^5 + B) \begin{bmatrix} x \\ y \end{bmatrix} = \begin{bmatrix} 0 \\ 0 \end{bmatrix}$, then find (x, y) .

5. Let one end of focal chord of the parabola $y^2 = 16x$ be $(16, 16)$. If $P(\alpha, \beta)$ divides this focal chord internally in the ratio $5 : 2$, then the minimum value of $\alpha + \beta$ is equal to

- (A) 7
(B) 22
(C) 5
(D) 16

6.

$$\left(\frac{1}{{}^{15}C_0} + \frac{1}{{}^{15}C_1}\right) \left(\frac{1}{{}^{15}C_1} + \frac{1}{{}^{15}C_2}\right) \cdots \left(\frac{1}{{}^{15}C_{12}} + \frac{1}{{}^{15}C_{13}}\right) = \frac{\alpha^{13}}{{}^{14}C_0 \cdot {}^{14}C_1 \cdot {}^{14}C_2 \cdots {}^{14}C_{12}}$$

If so, then find the value of 30α .
