JEE Main 2024 Question Paper Feb 1 Shift 1 (B.E./B.Tech)

JEE Main Physics Questions

Ques 1. Determine Min. Energy released when an electron jumps to ground state in Balmer series from infinity.

Ans. +1.9eV

Ques 2. Determine ratio of de broglie wavelength of α- particle and proton

Ans. 1:2

Ques 3. If current in a conductor 3t^2 + 4t^3, charge = ?, flow t = 1 to t = 2s

Ans. 22C

Ques 4. With rise in temperature the young's modulus of elasticity

A. Increases
B. Decreases
C. Remaining constant
D. None of these

Ans. B

Ques 5. Find percentage change in capacitance if potential difference across it has been changed from V to 2V.

Ans. 3V/2

Ques 6. A vernier caliper has 10 main scale divisions coinciding with 11 vernier scale division equals 5 mm. the least count of the device is :

- **A. ½**
- **B. 5/12**
- **C. 5/11**
- **D. 0.3**

Ans. C

JEE Main Chemistry Questions

Ques 1. In case of isoelectronic species the size of F^-, Na and Na^+ is affected by:

- **A. Principle of Quantum number(n)**
- **B. Electron - electron interaction**
- **C. Nuclear change (z)**
- **D. None of the factors because their size is the same**

Ans. C

Ques 2. **S.I:** $[Ni(H_2O)_6]^{2+}$ **is green in colour**

S.II:: $[Ni(ON)_4]^{2-}$ **is colourless**

Ans. Both the statements are correct

Ques 3. In Kjeldahl's method for estimation of nitrogen, $CuSO_4$ acts as

- **A. Oxidizing agent**

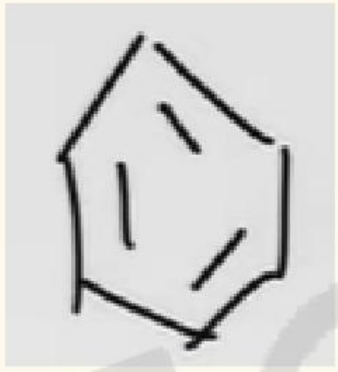
B. **Reducing agent**
C. **Catalytic agent**
D. **Hydrolysis agent**

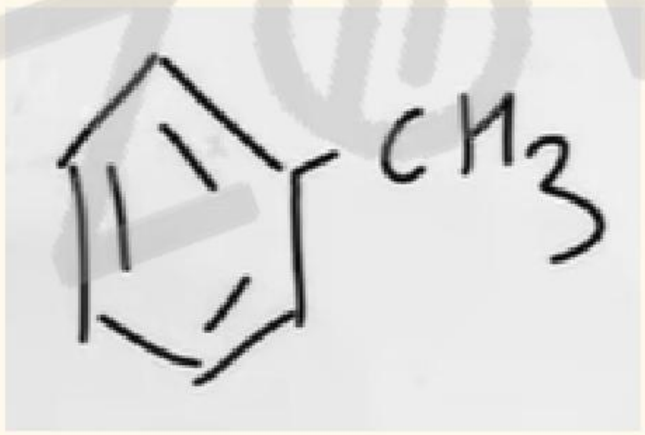
Ans. C

Ques 4. Which is homoleptic complex

Ans. $[Ni(CN)_4]^{2-}$

Ques 5. Which is following compound is easily attacked by electrophile

A. 

B. 

C. 

D. 

Ans. D

JEE Main Mathematics Questions

Ques 1. Number of ways of arranging 5 officers in 4 rooms

Ans. 1024

Ques 2. 3, a, b, c are in Ap 3, a-1, b+1,c+9 → GP Then AM of a, b, c is

Ans. 11

Ques 3. 3 , 7 , 1 ,....., 404 and 4 , 7, 10 ,....., 403 sum of common terms

Ans. 6970

Ques 4. The value of integral $\int_0^{\pi/4} \frac{xdx}{\cos^4 2x+\sin^4 2x} =$

Ans. π^2/16√2

Ques 5. $L_1: \bar{\gamma} = (i + 2j + 3k) + \lambda(i - j + k); L_2: \bar{\gamma} = (4i + 5j + 6k) - \mu(i + j - k)$
intersect L1 and L2 at P and Q respectively. If (α, β, γ) is the mid point of the line segment PQ, then 2(α, β, γ) is equal to

Ans. (1, 2, 3)