

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

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 charge (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

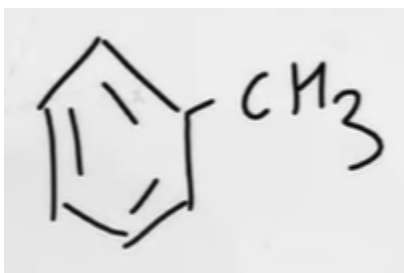
Ans. $[\text{Ni}(\text{CN})_4]^{2-}$

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

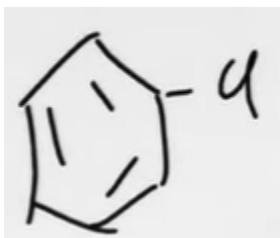
A.



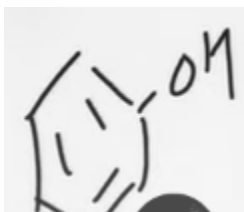
B.



C.



D.



Ans. D

Ques 6. The dimensions of angular impulse is equal to :

- A. $[\text{ML}^2\text{T}^{-1}]$**
- B. $[\text{ML}^2\text{T}]$**
- C. $[\text{ML}^2\text{T}^2]$**
- D. $[\text{MLT}^{-1}]$**

Ans. A

Ques 7. Complementary stand of DNA ATGCTTCA is:

- A. TACGAAGA**
- B. TACGAAGT**
- C. TAGCAACA**
- D. TAGCTACT**

Ans. B

Ques 8. We are given with 3 NaCl samples and their Van 't Hoff factors

Sample	van 't Hoff factor
Sample – 1 (0.1M)	i_1
Sample – 2 (0.01M)	i_2
Sample – 3 (0.001M)	i_3

- A. $i_1 = i_2 = i_3$**
- B. $i_1 > i_2 > i_3$**
- C. $i_1 > i_2 > i_3$**
- D. $i_1 > i_3 > i_2$**

Ans. A

Ques 9. Which of the following is correct for adiabatic free expansion against vacuum?

- A. $q = 0, \Delta U = 0, w = 0$**
- B. $q \neq 0, w \neq 0, \Delta U = 0$**
- C. $q = 0, \Delta U \neq 0, w \neq 0$**
- D. $q = 0, \Delta U \neq 0, w \neq 0$**

Ans. A

Ques 10. Which of the following have a trigonal bipyramidal shape?

PF₅, PBr₅, [PtCl₄], SF₆, BF₃, BrF₅, PCl₅, [Fe(CO)₅]

A. PF₅, PBr₅, PCl₅, [Fe(CO)₅] only

B. PF₅, PBr₅, PCl₅, BrF₅ only

C. PF₅, PCl₅, [Fe(CO)₅] only

D. PF₅, PBr₅, BrFS, PCl₅, [Fe(CO)₅] only

Ans. A