JEE Main 2024 Chemistry Question Paper Jan 29 Shift 2 (B.E./B.Tech)

JEE Main Chemistry Questions

Ques 1. Which of the following elements has the highest 1st ionization energy ?

A. N
B. C
C. Si
D. Al

Ans. A

Ques 2. Which reagent gives bright red ppt. With Ni2+ in basic medium?

A. DMG
B. Nessler's Reagent
C. KCNS
D. K4[Fe(CN)6]

Ans. A

Ques 3. Match the following:

(A) Lyman (i) IR
(B) Balmer (ii) IR
(C) Paschen (iii) Visible
(D) p-fund (iv) UV

A. A -> (iv), B -> (iii), C-> (i), D-> (ii)
B. A -> (iv), B-> (i), C-> (iii), D-> (ii)
C. A -> (i). B -> (iii). C. -> (ii). D -> (iv)
D. A -> (i). B-> (ii). C-> (iii). D-> (iv)

Ans. A

Ques 4. IUPAC name of K2MnO4 is

A. **Potassium tetraoxomanganate(VI)**
B. **Potassium tetraoxomanganate(III)**
C. **Potassium tetraoxomanganate(VI)**
D. **Tetraoxomanganate(VI) potassium**

Ans. A

Ques 5. If standard enthalpy of vaporization of CCl4 is 30.5 kJ/mol, find heat absorbed for vaporization of 294 gm of CCl4. [Nearest integer] [in kJ/mol]

Ans. 57

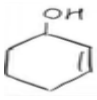
Ques 6. Best reducing agent among the given ions are:

A. **Ce^{4+}**
B. **Gd^{2+}**
C. **Lu^{3+}**
D. **Nd^{3+}**

Ans. B

Ques 7. Oxidation state of Fe(iron) in complex formed in brown ring test

Ans. +3

Ques 8. IUPAC Name of the compound  **is**

A. **Hex-2-en-1-ol**
B. **Cyclohex-2-en-1-ol**
C. **3-Hydroxycyclohexane**

D. Cyclohex-1-en-3-ol

Ans. B

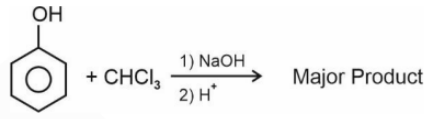
Ques 9 . Why does oxygen show anomalous behavior

A. Large size, high electronegativity
B. Small size, small electronegativity
C. Small size, high electronegativity, absence of vacant d- orbital
D. Large size high electronegativity presence of vacant d orbital

Ans. C

Ques 10. How many of the following compounds have zero dipole moment.
NH3, H2O, HF, CO2, SO2, BF3, CH4

Ans. 3

Ques 11. 

The major product in the above reaction is

A. 2-hydroxybenzaldehyde
B. 2-hydroxybenzoic acid
C. 4-hydroxybenzaldehyde
D. 3-hydroxybenzaldehyde

Ans. A

Ques 12. The correct statement about Zn, Cd, Hg are

A. All are solid metals at room temperature B.
B. They have high enthalpy of atomization
C. All are paramagnetic
D. Zn, Cd cannot show variable oxidation state but Hg can show variable oxidation state

Ans. D

Ques 13. . In chromatographic techniques, which of the following follows preferential adsorption?
(A) Column chromatography
(B) Thin layer chromatography
(C) Paper chromatography

- **A. A only**
- **B. B only**
- **C. C only**
- **D. A and B both**

Ans. D

Ques 14. Find the total number of sigma and pi bonds in 2-formylhex-4-enoic acid.

- **A. 20**
- **B. 22**
- **C. 18**
- **D. 24**

Ans. B

Ques 15. A gas 'X' is added to Nessler's reagent then brown precipitate is formed, gas X is

- **A. NH_3**
- **B. SO_2**
- **C. Cl_2**
- **D. Br_2**

Ans. A
