

CUET 2026 May 31 Shift 2 Chemistry

Question Paper (Memory-Based)

Conducted by National Testing Agency (NTA)

1. A compound *A* having molecular formula C_7H_8O gives a violet colour with neutral $FeCl_3$. On treatment with excess CH_3I/K_2CO_3 , it forms compound *B*. Ozonolysis of *B* followed by reductive workup (Zn/H_2O) gives one mole of methanal and one mole of anisaldehyde. The number of phenolic compounds among *A*, *B*, and the ozonolysis products is:

- (A) 0
- (B) 1
- (C) 2
- (D) 3

2. Aldehyde *A* undergoes Cannizzaro reaction to give compounds *B* and *C*. Compound *B* on oxidation gives benzoic acid. Compound *C* gives positive iodoform test after suitable oxidation. Compound *A* is:

- (A) Benzaldehyde
- (B) Formaldehyde
- (C) Acetaldehyde
- (D) Propanal

3. The molar conductivity of CH_3COOH at a certain concentration is $39.0 \Omega^{-1} cm^2 mol^{-1}$. Given that the limiting molar conductivities are:

$$\Lambda_m^\circ(HCl) = 426.0 \Omega^{-1} cm^2 mol^{-1}$$

$$\Lambda_m^\circ(CH_3COONa) = 91.0 \Omega^{-1} cm^2 mol^{-1}$$

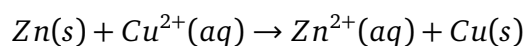
$$\Lambda_m^\circ(NaCl) = 126.0 \Omega^{-1} cm^2 mol^{-1}$$

The degree of dissociation of acetic acid at this concentration is:

- (A) 0.25

- (B) 0.40
 - (C) 0.50
 - (D) 0.60
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4. For the cell reaction



the standard cell potential is 1.10 V. If

$$[\text{Zn}^{2+}] = 0.10 \text{ M}$$

and

$$[\text{Cu}^{2+}] = 1.0 \times 10^{-3} \text{ M}$$

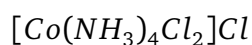
at 298 K, the cell potential is closest to:

- (A) 0.98 V
 - (B) 1.04 V
 - (C) 1.16 V
 - (D) 1.22 V
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5. A first-order reaction has a rate constant of $2.0 \times 10^{-3} \text{ s}^{-1}$ at 300 K and $8.0 \times 10^{-3} \text{ s}^{-1}$ at 330 K. Assuming the Arrhenius equation to be valid, the activation energy of the reaction is closest to:

- (A) 28.5 kJ mol⁻¹
 - (B) 38.0 kJ mol⁻¹
 - (C) 57.0 kJ mol⁻¹
 - (D) 76.0 kJ mol⁻¹
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6. A coordination compound has the formula



The magnetic moment of the complex is found to be approximately 4.9 BM. The hybridization and geometry of the complex ion are respectively:

- (A) dsp^2 , square planar
 - (B) sp^3 , tetrahedral
 - (C) d^2sp^3 , octahedral
 - (D) sp^3d^2 , octahedral
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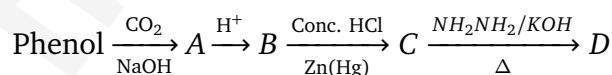
7. EDTA forms a stable complex with a metal ion M^{3+} . The complex formed is octahedral and represented as $[M(EDTA)]^-$. Which of the following statements is correct?

- (A) EDTA acts as a tetradentate ligand and the complex shows geometrical isomerism only
 - (B) EDTA acts as a hexadentate ligand and the complex can show optical isomerism
 - (C) EDTA acts as a bidentate ligand and the complex shows linkage isomerism
 - (D) EDTA acts as a monodentate ligand and the complex is tetrahedral
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8. Which of the following statements regarding lanthanoids is correct?

- (A) Basicity of lanthanoid hydroxides increases from $La(OH)_3$ to $Lu(OH)_3$
 - (B) Lanthanoid contraction occurs because of poor shielding by 4f-electrons
 - (C) Ce^{4+} is less stable than Ce^{3+} because of its noble gas configuration
 - (D) Atomic size increases regularly from La to Lu
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9. Phenol is subjected to the following sequence of reactions:



If A is formed via Kolbe-Schmitt reaction and the final product D is obtained after the given sequence, then D is:

- (A) Benzene
 - (B) Toluene
 - (C) Cyclohexane
 - (D) Phenol
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10. Consider the following statements regarding carbohydrates:

Assertion (A): Sucrose is a non-reducing sugar.

Reason (R): In sucrose, both the anomeric carbon atoms of glucose and fructose participate in glycosidic bond formation.

Choose the correct option.

- (A) Both Assertion and Reason are true, and Reason is the correct explanation of Assertion
 - (B) Both Assertion and Reason are true, but Reason is not the correct explanation of Assertion
 - (C) Assertion is true, but Reason is false
 - (D) Assertion is false, but Reason is true
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