

STD: XII

ONE MARK TEST – 8
CHEMISTRY

Marks: 30 / Time: 45 Min.

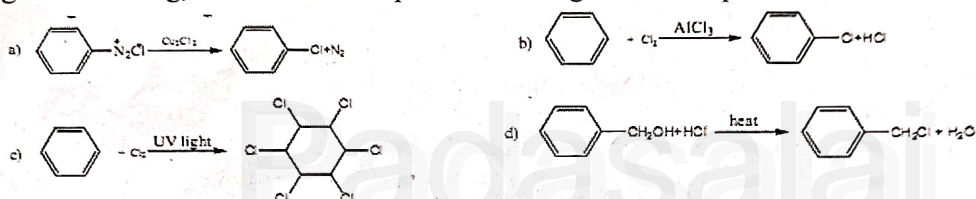
Choose the correct answer.

- For the cell reaction $2\text{Fe}^{3+}(\text{aq}) + 2\text{I}^{-}(\text{aq}) \rightarrow 2\text{Fe}^{2+}(\text{aq}) + \text{I}_2(\text{aq})$
 $E^{\circ}_{\text{cell}} = 0.24\text{V}$ at 298K. The standard Gibbs energy ($\Delta_r G^{\circ}$) of the cell reactions is:
 a) $-46.32 \text{ KJ mol}^{-1}$ b) $-23.16 \text{ KJ mol}^{-1}$ c) $46.32 \text{ KJ mol}^{-1}$ d) $23.16 \text{ KJ mol}^{-1}$
- Lithium ion battery is a
 a) primary battery b) secondary battery
 c) non – rechargeable battery d) none of the above
- Assertion: pure iron when heated in dry air is converted with a layer of rust.
 Reason: Rust has the composition Fe_2O_3
 a) if both assertion and reason are true and reason is the correct explanation of assertion
 b) if both assertion and reason are true but reason is not the correct explanation of assertion
 c) assertion is true but reason is false
 d) both assertion and reason are false.
- As concentration of the electrolyte decreases the molar conductance and equivalent conductance of the Solution
 a) decreases b) increases c) remains the same d) becomes zero
- The equivalent conductance of M/36 solution of a weak monobasic acid is $6 \text{ mho cm}^2 \text{ equivalent}^{-1}$ and at infinite dilution is $400 \text{ mho cm}^2 \text{ equivalent}^{-1}$. The dissociation constant of this acid is
 a) 1.25×10^{-6} b) 6.25×10^{-6} c) 1.25×10^{-4} d) 6.25×10^{-5}
- The general representation of a fuel cell is
 a) Fuel / Electrode / Electrolyte / Electrode / Oxidant
 b) Oxidant / Electrode / Electrolyte / Fuel
 c) Fuel / Electrode / Electrolyte / Electrode / Reductant
 d) Oxidant / Electrode / Electrolyte / Reductant
- Conductivity of a saturated solution of a sparingly soluble salt AB (1:1 electrolyte) at 298K is $1.85 \times 10^{-5} \text{ S m}^{-1}$. Solubility product of the salt AB at 298K (Λ°_m)_{AB} = $14 \times 10^{-3} \text{ S m}^2 \text{ mol}^{-1}$.
 a) 5.7×10^{-12} b) 1.32×10^{-12} c) 7.5×10^{-12} d) 1.74×10^{-12}
- When electric current is passed through an electrolytic solution, charge is carried by
 a) electrons b) ions c) atoms d) molecules
- While charging lead storage battery
 a) PbSO_4 on cathode is reduced to Pb b) PbSO_4 on anode is oxidised to PbO_2
 c) PbSO_4 on anode is reduced to Pb d) PbSO_4 on cathode is oxidised to Pb
- Which of the following statement is correct with respect to electrolytic conductance?
 a) Conductivity increases with the decreases in Viscosity
 b) Conductivity increases with increase in temperature
 c) Molar conductance of a solution decreases with increase in dilution
 d) Conductance decrease with increase in temperature.
- A current strength of 3.86 A was passed through molten Calcium oxide for 41 minutes and 40 seconds. The mass of Calcium in grams deposited at the cathode is (atomic mass of Ca is 40g / mol and $1\text{F} = 96500\text{C}$)
 a) 4 b) 2 c) 8 d) 6
- The device which converts electrical energy into chemical energy is known as
 a) Galvanic cell b) Voltaic cell c) electrolytic cell d) all the above
- The molar conductivity of a 0.5 mol dm^{-3} solution of AgNO_3 with electrolytic conductivity of $5.76 \times 10^{-3} \text{ S cm}^{-1}$ at 298 K is
 a) $2.88 \text{ S cm}^2 \text{ mol}^{-1}$ b) $11.52 \text{ S cm}^2 \text{ mol}^{-1}$ c) $0.086 \text{ S cm}^2 \text{ mol}^{-1}$ d) $28.8 \text{ S cm}^2 \text{ mol}^{-1}$
- The button cell used in watches function as follows
 $\text{Zn(s)} + \text{Ag}_2\text{O(s)} + \text{H}_2\text{O(l)} \rightleftharpoons 2\text{Ag(s)} + \text{Zn}^{2+}(\text{aq}) + 2\text{OH}^{-}(\text{aq})$ the half cell potentials are
 $\text{Ag}_2\text{O(s)} + \text{H}_2\text{O(l)} + 2\text{e}^{-} \rightarrow 2\text{Ag(s)} + 2\text{OH}^{-}(\text{aq})$ $E^{\circ} = 0.34\text{V}$ and $\text{Zn(s)} \rightarrow \text{Zn}^{2+}(\text{aq}) + 2\text{e}^{-}$ $E^{\circ} = 0.076 \text{ V}$.
 The cell potential will be
 a) 0.84V b) 1.34V c) 1.10V d) 0.42V
- During the electrolysis of fused NaCl, which reaction occurs at anode
 a) chloride ions are oxidized b) chloride ions are reduced
 c) Sodium ions are oxidised d) sodium ions are reduced
- Which one of the following will not undergo Hofmann bromamide reaction

18 b. $11.52 \text{ S cm}^2 \text{ mol}^{-1}$

- a) $\text{CH}_3\text{CONHCH}_3$ b) $\text{CH}_3\text{CH}_2\text{CONH}_2$ c) CH_3CONH_2 d) $\text{C}_6\text{H}_5\text{CONH}_2$
17. The product formed by the reaction an aldehyde with a primary amine
 a) carboxylic acid b) aromatic acid c) schiff's base d) ketone
18. Two molecules of propionitrile in the presence of Na/Ether to form 3-imino- 2-methylpentanenitrile. This reaction is known as
 a) Baltz – schiemann reaction b) Thorpe nitrile condensation
 c) Gomberg reaction d) Schoffen – Baumann reaction
19. Which one of the following nitro compounds does not react with nitrous acid
 a) $\text{CH}_3 - \text{CH}_2 - \text{CH}_2 - \text{NO}_2$ b) $(\text{CH}_3)_2 \text{CH} - \text{CH}_2 \text{NO}_2$
 c) $(\text{CH}_3)_3 \text{C NO}_2$ d) $\text{CH}_3 - \underset{\text{O}}{\underset{\parallel}{\text{C}}} - \underset{\text{CH}_3}{\underset{|}{\text{CH}}} - \text{NO}_2$

20. The method by which aniline cannot be prepared is
 a) degradation of benzamide with $\text{Br}_2 / \text{NaOH}$
 b) potassium salt of phthalimide treated with chlorobenzene followed by hydrolysis with aqueous NaOH solution
 c) reduction of Nitrobenzene with LiAlH_4
 d) reduction of nitrobenzene by Sn / HCl .
21. The correct order of acidic nature of nitro alkanes is
 a) nitro propane > nitroethane > nitro methane
 b) nitro propane < nitroethane < nitromethane
 c) nitro methane < nitro ethane < nitro propane
 d) nitro ethane > nitro methane > nitro propane
22. Among the following, the reaction that proceeds through an electrophilic substitution, is:



23. Among the three types of amines, secondary amine is more basic due to
 a) +I effect b) steric effect c) hydration effect d) all the above
24. Secondary nitro alkanes react with nitrous acid to form
 a) red solution b) blue solution c) green solution d) yellow solution
25. Nitro ethane and ethyl nitrite are
 a) chain isomers b) position isomers c) functional isomers d) tautomers
26. Which of the following nitro compounds when reacted with nitrous acid followed by treatment with alkali produces blue colour?
 a) 2-methyl-2-nitropropane b) 2-methyl-1-nitropropane
 c) 2-nitropropane d) nitrobenzene
27. Nitrobenzene on reaction with $\text{Con HNO}_3 / \text{H}_2 \text{SO}_4$ at $80-100^\circ \text{C}$ forms which one of the following products?
 a) 1,4 – dinitrobenzene b) 2,4,6 – trinitrobenzene
 c) 1,2 – dinitrobenzene d) 1,3 – dinitrobenzene
28. The test used to identify a secondary amine is
 a) iodo form test b) silver mirror test
 c) Libermann's nitroso test d) carbylamine test
29. The order of basic strength for methyl substituted amines in aqueous solution is
 a) $\text{N}(\text{CH}_3)_3 > \text{N}(\text{CH}_3)_2\text{H} > \text{N}(\text{CH}_3)\text{H}_2 > \text{NH}_3$ b) $\text{N}(\text{CH}_3)\text{H}_2 > \text{N}(\text{CH}_3)_2\text{H} > \text{N}(\text{CH}_3)_3 > \text{NH}_3$
 c) $\text{NH}_3 > \text{N}(\text{CH}_3)\text{H}_2 > \text{N}(\text{CH}_3)_2\text{H} > \text{N}(\text{CH}_3)_3$ d) $\text{N}(\text{CH}_3)_2\text{H} > \text{N}(\text{CH}_3)\text{H}_2 > \text{N}(\text{CH}_3)_3 > \text{NH}_3$
30. $\text{C}_6\text{H}_5\text{N}_2 \text{Cl} + \text{H}_3\text{PO}_2 + \text{H}_2\text{O} \rightarrow \text{C}_6\text{H}_6 + \text{H}_3\text{PO}_3 + \text{HCl} + \text{N}_2$ This reaction proceeds through
 a) SN^1 mechanism b) SN^2 mechanism
 c) free radical mechanism d) elimination reaction

CHEMISTRY

Lesson: 9 & 13

ONE MARK TEST - 8

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Choose the correct answer.		V. Madhapati-Chowdary Krishnagiri-Dist.	
1.	a. $-46.32 \text{ kJ mol}^{-1}$	14.	c. 1.10V
2.	b. secondary battery	15.	a. chloride ions are oxidized
3.	d. both assertion and reason are false	16.	a. $\text{CH}_3\text{CONHCH}_3$
4.	b. increases	17.	c. Schiff's base
5.	b. 6.25×10^{-6}	18.	b. Thorpe nHofle condensation
6.	a. Fuel / Electrode / Electrolyte Electrode / oxidant	19.	c. $(\text{CH}_3)_3\text{CNO}_2$
7.	d. 1.74×10^{-12}	20.	b. potassium salt of phthalimide treated with chlorobenzene followed by hydrolysis with aqueous.
8.	b. ions	21.	b. nitro propane > nitroethane > nitromethane
9.	c. PbSO_4 on anode is reduced to Pb	22.	b.
10.	c. Molar conductance of a solution decreases with increase in dilution	23.	d. all the above
11.	b. 2	24.	b. blue solution
12.	c. electrolytic cell	25.	d. tautomers
13.	b. $11.52 \text{ S cm}^2 \text{ mol}^{-1}$	26.	c. 2 - nitropropane
		27.	d. 1, 3 - dinitrobenzene
		28.	c. Libermann's nitroso test
		29.	d. $\text{N}(\text{CCH}_3)_2\text{H} > \text{N}(\text{CH}_3)_2\text{H} > \text{N}(\text{CH}_3)_3 > \text{NH}_3$
		30.	c. free radical mechanism

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