CHEMISTRY SSC-I (2025-26)
CH:7 Electrochemistry
(Lecturer Ayesha Amjad)
SECTION-A (12 MARKS)
SOCH BADLO BY MAK

Fill the relevant bubble against each question according to curriculum.

Question	A	B	C	D	A B C D
1: Tinning is :	Coating With Sn	Coating With Zn	Coating With Cr	Coating With Cu	○ ○ ○ ○
2: Which of the following is not the condition for electroplating:	High current and low temperature	Low current and high temperature	High concentration of metal in the electrolyte	None of the above	○ ○ ○ ○
3. In electroplating, the material to be electroplated is taken at:	Cathode	Anode	Electrolyte	Both A & B	○ ○ ○ ○
4: Oxidation state of Sulphur in SO_2 is:	+2	+4	-4	-2	○ ○ ○ ○
5: Ore is converted to oxides in metallurgical industries because:	To Add Oxygen	To Remove Sulphur	To Add Sulphur	None Of These	○ ○ ○ ○
6: Consider the following reaction $ZnO + H_2 \rightarrow Zn + H_2O$ In this reaction, ZnO behaves as:	Reducing Agent	Oxidizing Agent	Electrolyte	Catalyst	○ ○ ○ ○
7: Silver tarnishes in air to produce------ which gives a blackish appearance:	Ag_2S	AgS	AgS_2	Ag_2S_2	○ ○ ○ ○
8. The oxidation state of Cr in $K_2Cr_2O_7$ is?	+12	+6	+3	-6	○ ○ ○ ○
9: Photography is the process of:	Oxidation of Ag	reduction of Ag ions	both oxidation of Ag & reduction by hydroquinone	reduction of quinone	○ ○ ○ ○
10: The oxidation state of carbonate is:	+1	-2	+2	-3	○ ○ ○ ○

11: The oxidation state of Hydrogen in H_2 is:	**+1**	**0**	**+2**	**-3**	○ ○ ○ ○
12: In an Electrolytic cell, oxidation takes place at:	**cathode**	**Anode**	**electrolyte**	**overall reaction**	○ ○ ○ ○

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SECTION-B (Total Marks 30)

Answer the following questions briefly. Each question carries 3 marks

i)	Differentiate between oxidation and reduction?	OR	Define oxidation state why it is used in chemical reactions?
ii)	Determine the oxidation state of the central element in $KMnO_4$?	OR	Identify elements that are oxidized and reduced in the following reaction $WO_2 + 3H_2 \rightarrow W + 3H_2O$
iii)	Explain how redox reactions occur in Photography?	OR	Find the oxidation state of each element in Phosphoric Acid (H_3PO_4)?
iv)	Define an electrolytic cell. Sketch an Electrolytic cell and label its components and their function.	OR	Why is cathodic protection needed? Write basic reactions involved.
v)	Define alloying, why it is used give an example?	OR	Differentiate between oxidizing and reducing agents?
vi)	Write reactions in the rusting of iron?	OR	How are air pollutants involved in acid rain?
vii)	How to Write the Formula of an Ionic Compound?	OR	Identify which element is reduced and which is oxidized in the following reaction $F_2 + MgBr_2 \rightarrow MgF_2 + Br_2$
viii)	What is cathodic protection, and why is it used?	OR	Differentiate between spontaneous and non-spontaneous reactions?
ix)	Identify oxidizing and reducing agents in the following reaction and give a reason: $ZnO + C \rightarrow Zn + CO$	OR	Write the oxidation state of the central element in H_2SO_4?
x)	Identify oxidizing and reducing agents in the following reaction? $Fe_2O_3 + CO \rightarrow Fe + CO_2$	OR	Explain tin plating its reactions and why it is used?

SECTION C (Marks 18)

Attempt the following questions. Marks of each question are given within brackets.

Q3	**Identify oxidizing and reducing agents in the following reactions: (6)** **1. $H_2O_2 + Ag_2O \rightarrow 2Ag + H_2O + O_2$** **2. $4H_2O_2 + PbS \rightarrow PbSO_4 + 4H_2O$**	**OR**	**Find the oxidation state of Nitrogen in the following compounds (6)** **A) NO_2 B) N_2O** **C) N_2O_3 D) HNO_3**
Q4	**How is electricity generated through the Electrolysis process? (6)**	**OR**	**What are the preventive methods of corrosion? (6)**
Q5	**Write rules for assigning Oxidation state to elements with examples? (6)**	**OR**	**Explain how redox in photography occurs with Basic reactions? (6)**

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