



XI-SCI : Chemistry
Redox Reactions,

DATE:

TIME: 1 hour 30
minutes

MARKS: 25

SEAT NO:

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Note:-

1. All Questions are compulsory.
2. Numbers on the right indicate full marks.

Section A

Q.1 Select and write the correct answer.

(4)

1. Oxidation number of oxygen in dioxygen difluoride is
A) -1 B) -2
C) +1 D) +2
2. Oxidation number of P is +3 in the compound
A) H_3PO_2 B) H_3PO_3
C) H_3PO_4 D) $\text{H}_4\text{P}_2\text{O}_7$
3. Oxidation number of H in AlH_3 is
A) +1 B) -1
C) +3 D) Zero
4. Oxidation number of Cl in KClO_3 is
A) -1 B) -5
C) +1 D) +5

Q.2 Answer the following.

(3)

1. Why does old car bumper changes colour?
2. Calculate the oxidation number of underlined atom.
 $\text{H}_2\underline{\text{S}}\text{O}_4$
3. Write oxidation and reduction reactions for the following redox reactions.
 $\text{Cu}_{(s)} + 2\text{Ag}_{(aq)}^+ \rightarrow \text{Cu}_{(aq)}^{2+} + 2\text{Ag}_{(s)}$

Section B

Attempt any Four

- Q.3 In which chemical reaction does carbon exhibit variation of oxidation state from -4 to +4. Write balanced chemical reaction. **(2)**
- Q.4 Give significance of E^0 value. **(2)**
- Q.5 Justify the following reactions as redox reaction and find out oxidizing and reducing agents. **(2)**
 $2\text{Na}_{(s)} + \text{S}_{(s)} \rightarrow \text{Na}_2\text{S}_{(s)}$
- Q.6 Define oxidation and reduction on the basis of oxidation number concept. **(2)**

Q.7 Write oxidation and reduction reactions for the following redox reactions. (2)
 $2\text{K}_{(s)} + \text{Cl}_{2(g)} \rightarrow 2\text{KCl}_{(s)}$

Q.8 Assign oxidation number to each atom in $\text{Cr}(\text{OH})_4^\ominus$ (2)

Section C
Attempt any Two

Q.9 Explain the terms : Oxidant and Reductant (3)

Q.10 Explain redox reaction with example (3)

Q.11 Which of the following redox couple is stronger reducing agent? (3)

1. Li ($E^0 = -3.05 \text{ V}$) and Mg ($E^0 = -2.36 \text{ V}$)

2. Zn ($E^0 = -0.76 \text{ V}$) and Fe ($E^0 = -0.44 \text{ V}$)

Section D
Attempt any One

Q.12 What are electrochemical cells? Represent the Daniel cell having electrodes of zinc and copper dipped in their respective salts with labelled diagram. (4)

Q.13 Explain oxidant and reductant on the basis of oxidation number concept with one example. (4)