

O.P.JINDAL SCHOOL,SAVITRINAGAR
PERIODIC TEST -II (2023-24)

CLASS-XI
SUBJECT-CHEMISTRY

MAX.MARKS-20
MAX.TIME-1HOUR

General Instruction:-

- (i) All questions are compulsory. There are 12 questions in this question paper with internal choice.
(ii) **SECTION -A:** Question numbers 1 to 6 are MCQs, carrying 1 mark each.
(iii) **SECTION -B:** Question numbers 7 to 10 are short answer questions carrying 2 marks each.
(iv) **SECTION -C:** Question numbers 11 and 12 are long questions carrying 3 marks each.
(v) Use of calculator is not permitted. However, you may use log tables, if necessary.

Q-1. In the reaction, $4\text{Na} + \text{O}_2 \rightarrow 2\text{Na}_2\text{O}$, sodium acts as :

- (a) oxidising agent (b) reducing agent
(c) complexing agent (d) both oxidising and reducing agent

Q-2. For the reaction, $\text{CO}(\text{g}) + \text{Cl}_2(\text{g}) \rightleftharpoons \text{COCl}_2(\text{g})$, the value of K_p / K_c is equal to

- (a) $1/\text{RT}$ (b) 1.0
(c) $(\text{RT})^{1/2}$ (d) RT

Q-3. The oxidation number of O in KO_2 is

- (a) 0 (b) -2
(c) -0.5 (d) -1

Q-4. Which of the following is least likely to behave as a Lewis base?

- (a) OH^- (b) H_2O
(c) NH_3 (d) BF_3

Q-5. In the reaction, $\text{H}_2\text{O}_2 + \text{Na}_2\text{CO}_3 \rightarrow \text{Na}_2\text{O}_2 + \text{CO}_2 + \text{H}_2\text{O}$

The substance undergoing oxidation is :

- (a) H_2O_2 (b) None
(c) Na_2CO_3 (d) Na_2O_2

Q-6. Among the following, the weakest Bronsted base is :

- (a) F^- (b) Cl^-
(c) Br^- (d) I^-

Q-7. Write the conjugate acid and conjugate base of the following amphoteric species:

- (i) HCO_3^- (ii) NH_3 (iii) H_2O (iv) HS^-

Q-8. Find out the oxidation number of sulphur in the following molecules or ions:



OR

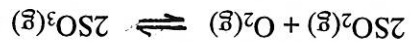
Find out the oxidation number of carbon in the following compounds:



Q-9. The concentration of hydrogen ion in a sample of soft drink is 4×10^{-3} M. Calculate its pH.

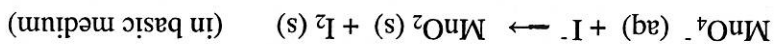
($\log 4 = 0.6020$)

Q-10. At 450K, the value of $K_p = 2 \times 10^{10}$ /bar for the given reaction at equilibrium:



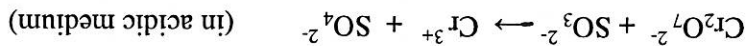
Find out the value of K_c at this temperature. ($\log 2 = 0.3010$)

Q-11. Balance the following redox reaction by ion-electron method:



OR

Balance the following redox reaction by oxidation number method:



Q-12. For the reaction, $\text{N}_2(\text{g}) + 3\text{H}_2(\text{g}) \rightleftharpoons 2\text{NH}_3(\text{g})$,

The value of $K_p = 49$ at 450K. Find out the value of K_p for each of the following reactions at same temperatures.

