

O.P.JINDAL SCHOOL,SAVITRINAGAR**PERIODIC TEST -III (2025-26)R-1 SET-A****CLASS-XI****MAX.MARKS-20****SUBJECT-CHEMISTRY****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 to10 are short answer questions carrying 2 marks each.
- (iv) **SECTION –C:** Question numbers 11 and 12 are long questions carrying 3marks each.
- (v) Use of calculator is not permitted. However, you may use log tables, if necessary.

SECTION-A**Q-1.** The oxidation number of Mn in KMnO_4 is

- (a)+1 (b)+3
(c)+5 (d)+7

Q-2. At 363 K, pure water has $[\text{H}_3\text{O}^+] = 10^{-7}$ M. The value of K_w at this temperature will be

- (a) 10^{-6} (b) 10^{-12}
(c) 10^{-8} (d) 10^{-14}

Q-3. In the redox reaction ,

Which one is reducing agent?

- (a) H^+ (b) MnO_4^-
(c) Br^- (d) Mn^{2+}

Q-4. A 0.2 molar solution of formic acid is 3.2% ionized. Its ionization constant is

- (a) 9.6×10^{-3} (b) 2.1×10^{-4}
(c) 1.25×10^{-6} (d) 4.8×10^{-5}

Q-5. In the reaction, $2\text{KClO}_3 \longrightarrow 2\text{KCl} + 3\text{O}_2$, the elements which have been oxidized and reduced respectively are :

- (a) chlorine and oxygen (b) oxygen and chlorine
(c) potassium and oxygen (d) oxygen and potassium

Q-6. The pH of 0.05M solution of a strong dibasic acid is :

- (a) 0.0 (b) 1.0
(c) 0.2 (d) 0.5

SECTION-B

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



Q-8. For a reaction, $\text{N}_2(\text{g}) + 3\text{H}_2(\text{g}) \rightleftharpoons 2\text{NH}_3(\text{g})$, the value of K_p is 3.6×10^{-2} at 500 K. Calculate the value of K_c for the reaction at this same temperature.

Q-9. (i) Write the oxidation and reduction half reactions from the following redox reaction.



(ii) Find the value of n in

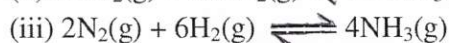
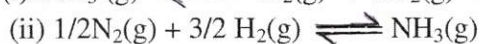


Q-10. Justify that the reaction,



is a redox reaction. Identify the species which acts as an oxidant and which acts as a reductant

Q-11. For the reaction, $\text{N}_2(\text{g}) + 3\text{H}_2(\text{g}) \rightleftharpoons 2\text{NH}_3(\text{g})$, the value of $K_p = 41$ at 400 K. Find out K_p for each of the following reactions at the same temperature:



Q-12. Balance the following equation in acidic medium by ion-electron method.



OR

Balance the following equation in acidic medium by oxidation number method.

