

O.P.JINDAL SCHOOL,SAVITRINAGAR**PERIODIC TEST -III (2025-26)R-2 SET-A****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 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 Cr in $K_2Cr_2O_7$ is

- (a)+1 (b)+5
(c)+6 (d)+7

Q-2. What is the state of hybridization of carbon in carbocation?

- (a)sp (b) sp^2
(c) sp^3 (d) sp^3d

Q-3. In the reaction, $N_2(g) + O_2(g) \rightleftharpoons 2NO(g)$,if pressure is increased then equilibrium constant would :

- (a)increase (b)remain unchanged
(c)decrease (d)sometimes increase sometimes decrease

Q-4. Which amongst the following will be most stable?

- (a) $CH_3\overset{+}{C}H_2$ (b) $(CH_3)_2\overset{+}{C}H$
(c) $(CH_3)_3\overset{+}{C}CH_2$ (d) $(CH_3)_3\overset{+}{C}$

Q-5. The most stable free radical among the following is :

- (a) $C_6H_5CH_2\dot{C}H_2$ (b) $C_6H_5\dot{C}HCH_3$
(c) $CH_3\dot{C}H_2$ (d) $CH_3\dot{C}HCH_3$

- Q-6.** At 363 K, pure water has $[\text{OH}^-] = 10^{-7}$ M. The value of K_w at this temperature will be
 (a) 10^{-6} (b) 10^{-12}
 (c) 10^{-8} (d) 10^{-14}

SECTION-B

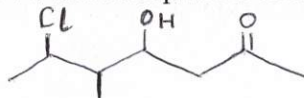
- Q-7.** At 500 K, equilibrium constant, K_c for the following reaction,
 $\frac{1}{2}\text{H}_2(\text{g}) + \frac{1}{2}\text{I}_2(\text{g}) \rightleftharpoons \text{HI}(\text{g})$ is 5.
 What would be the equilibrium constant K_c for given reaction,
 $2\text{HI}(\text{g}) \rightleftharpoons \text{H}_2(\text{g}) + \text{I}_2(\text{g})$

- Q-8.** For a reaction, $2\text{NOCl}(\text{g}) \rightleftharpoons 2\text{NO}(\text{g}) + \text{Cl}_2(\text{g})$, the value of K_c is 3.75×10^{-6} at 1069 K. Calculate the value of K_p for the reaction at this same temperature.

- Q-9.** Draw structure of all isomeric ethers having molecular formula $\text{C}_5\text{H}_{12}\text{O}$.

- Q-10.(i)** Write the structural formula of : 5-bromoheptanoic acid

(ii) Write IUPAC name of:



SECTION-C

- Q-11. (i)** Calculate the solubility of A_2X_3 in pure water, assuming that neither kind of ion reacts with water. The solubility product of A_2X_3 is 1.1×10^{-23} (K_{sp})
 (ii) The concentration of hydrogen ion in a sample of soft drink is 3.8×10^{-3} M. What is its pH ($\log 3.8 = 0.58$)
- Q-12.** Draw all the resonating structures of the following :
 (i) Phenoxide ion (ii) Nitro-benzene (iii) Aniline