

**HP BOARD OF SCHOOL EDUCATION DHARAMSHAL**

**Syllabus for 2<sup>nd</sup> term examination March / April 2022**

Class	11 <sup>th</sup>
Subject	Chemistry

1. Total Chapters = Chapter 06 to 14 = 09 Chapters
2. Maximum Marks = 50
3. Duration = 03 Hr
4. Total No of Question:
  - a. Q.1 to Q. 20 Objective type Questions (1 Mark each)
  - b. Q.21 to Q. 29 Subjective type Questions (2 Marks each)
  - c. Q. 30 to Q. 33 Subjective type Questions (3 Marks each)

5. Chapter wise distribution of Marks

Sr. No.	Chapter No.	Name of Chapter	No of 1 Mark Questions	No of 2 Marks Questions	No of 3 Marks Questions	Total Questions	Total Weightage
1.	Chapter – 6	Thermodynamics	2	2	-	4	6
2.	Chapter – 7	Equilibrium	2	2	-	4	6
3.	Chapter – 8	Redox Reaction	2	-	1	3	5
4.	Chapter – 9	Hydrogen	1	-	1	2	4
5.	Chapter – 10	The s- block elements	2	-	1	3	5
6.	Chapter – 11	The p – block elements	3	-	1	4	6
7.	Chapter – 12	Organic Chemistry - Some Basic Principles & Techniques	4	2	-	6	8
8.	Chapter – 13	Hydrocarbons	4	2	-	6	8
9.	Chapter – 14	Environmental Chemistry	-	1	-	1	2
Total						33	50

HIMACHAL PRADESH BOARD OF SCHOOL EDUCATION, DHARAMSHALA

Model Question Paper

Second Term Examination, March / April 2022


Class – 11

Duration – 03:00 Hr

Chemistry

M.M.: 50

- Instructions:
- i) All questions are compulsory.
  - ii) While answering your Questions, you must indicate on your Answer-book the same Question No. as appearing in your Question Paper.
  - iii) Internal choices are given in some questions.
  - iv) Question No. 1 to 20 carry 1 mark each, Question No. 21 to 29 carry 2 marks each and Question No. 30 to 33 carry 3 marks each.
  - v) Make neat and clean diagrams where required.

- Q.1 When system does not exchange heat with surrounding the process is called
- a) Isothermal
  - b) adiabatic
  - c) thermal
  - d) Isochoric
- Q.2 Which of the following is not Lewis acid
- a)  $\text{BF}_3$
  - b)  $\text{AlCl}_3$
  - c)  $\text{FeCl}_3$
  - d)  $\text{PH}_3$
- Q.3 Which of the following can act as an oxidising as well as reducing agent
- a)  $\text{H}_2\text{O}_2$
  - b)  $\text{SO}_3$
  - c)  $\text{H}_2\text{SO}_4$
  - d)  $\text{HNO}_3$
- Q.4 How many hydrogen bonded water molecules are associated with  $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$
- a) Five
  - b) One
  - c) One
  - d) Three
- Q.5 When Sodium reacts with excess of oxygen the oxidation number of oxygen changes from
- a) 0 to -1
  - b) 0 to -2
  - c) -1 to -2
  - d) Does not change
- Q.6 Group 13 elements shows
- a) only +1 oxidation state
  - b) only +3 oxidation state
  - c) +1 and +3 oxidation state
  - d) +1, +2 and +3 Oxidation States
- Q.7 Inductive effect involves
- a) displacement of  $\sigma$  electrons resulting polarisation
  - b) displacement of  $\pi$  electrons resulting polarisation
  - c) delocalisation of  $\sigma$  electrons
  - d) delocalisation of  $\pi$  electrons
- Q.8 The IUPAC name of given structure is
- 
- a) Hexane
  - b) Isopentane
  - c) 3 - Ethylbutane
  - d) 3 - Methylpentane

- Q.9 Wurtz fitting reaction is used to unite
- |                                  |                     |
|----------------------------------|---------------------|
| a) Two alkyhalides               | b) Two aryl halides |
| c) One alkyl and One aryl halide | d) None of these    |
- Q.10 The ease of dehydrohalogenation for different halogen is in the order
- |                                |                                |
|--------------------------------|--------------------------------|
| a) Iodide > Bromide > Chloride | b) Bromide > Iodide > Chloride |
| c) Chloride > Bromide > Iodide | d) Iodide > Chloride > Bromide |
- Q.11 All carbon atom in benzene are..... hybridized.
- Q.12 If  $\Delta G$  is – ive (  $\Delta G < 0$  ) then the process is .....
- Q.13 In the relation  $K_p = K_c (RT)^{\Delta n}$ ,  $\Delta n$  represents .....
- Q.14 Loss of electrons by any species is called as .....
- Q.15 ..... is the only alkali metal which when burnt in air forms a mixture of oxides as well nitride.
- Q.16 Thermodynamically the most stable form of carbon is .....
- Q.17 The general electronic configuration of Group – 13 elements is .....
- Q.18 If a covalent bond breaks in such a fashion that the shared pair of electrons remains with one of the fragments the cleavage is called .....
- Q.19 Two successive members of a homologous series differ from each other in their molecular formula by .....
- Q.20 The process of elimination of Carbon dioxide from a Carboxylic acid is known as .....
- Q.21 Calculate the heat of combustion of ethylene (gas) to form  $\text{CO}_2$  (gas) and  $\text{H}_2\text{O}$  (gas) at 298K and 1 atmospheric pressure. The heats of formation of  $\text{CO}_2$ ,  $\text{H}_2\text{O}$  and  $\text{C}_2\text{H}_4$  are – 393.7, - 241.8, + 52.3 kJ per mole respectively

OR

Derive relation between  $C_p$  and  $C_v$  for an ideal gas.

- Q.22 Differentiate between classical and photochemical smog.
- Q.23 Explain the term electrophile and nucleophile with example.
- Q.24 Explain the relative stability of conformations of n-butane.
- Q.25
- |    |                                       |
|----|---------------------------------------|
| a) | State Le chatelier's principle.       |
| b) | State the Law of Chemical equilibrium |
- Q.26
- |    |  |
|----|--|
| a) | Define Specific Heat.                  |
| b) | State the first Law of Thermodynamics. |
- Q.27 Explain why tertiary carbocation is more stable than secondary and primary carbocations?

OR

State and explain electromeric effect with example.

- Q. 28 a) What is peroxide effect?  
b) State Huckel's rule of aromaticity.

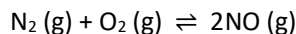
OR

Write short note on the following:

- a) Wurtz Reaction  
b) Friedel Craft Reaction  
Q.29 Calculate the  $p^{OH}$  value of the solution if its  $p^H$  is 7.

OR

At equilibrium the concentration of  $N_2 = 3.0 \times 10^{-3}M$ ,  $O_2 = 4.2 \times 10^{-3}M$  and  $NO = 2.8 \times 10^{-3}M$  in a sealed vessel at 800K. What will be  $K_c$  for the reaction



- Q.30 a) What is the cause of hardness of water?  
b) Why ice floats over water?  
Q.31 a) Define oxidation and reduction in terms of electrons transfer.  
b) Can we store copper sulphate in an iron vessel?  
c) Define electrode potential.

OR

- a) What do you mean by Electrochemical Series?  
b) Define disproportionation reaction.  
c) Write the functions of Salt bridge in electrochemical cell.  
Q.32 a) Why Be and Mg do not impart colour to the flame?  
b) Why do the alkali metals give blue solution, when treated with liquid  $NH_3$ ?  
c) Why is the oxidation state of Na and K always + 1?

OR

- a) Why is Na metal always kept in Kerosine Oil or Paraffine wax?  
b) Why Li is strongest reducing agent?  
c) Why Alkaline earth metals are harder than alkali metals?  
Q.33 a) Define inert pair effect.  
b) Give reactions to justify amphoteric nature of Aluminium.

OR

- a) Define catenation.  
b) Explain why there is phenomenal decrease in ionisation enthalpy from Carbon to Silicon?