Q1.   **12**

1. **Which acid causes the acidity of stomach?**

   (A) sulphuric acid   (B) hydrochloric acid   (C) nitric acid   (D) oxalic acid

2. **Which one is also called olefins?**

   (A) alkanes   (B) alkenes   (C) alkynes   (D) alcohols

3. **Which one of the following is not a fossil fuel?**

   (A) bio gas   (B) coal   (C) natural gas   (D) petroleum

4. **When glucose and fructose combine they produce:**

   (A) starch   (B) cellulose   (C) sucrose   (D) none of these

5. **You want to dry a gas, which one of the following salt you will use:**

   (A) NaCl   (B) $CaCO_3$ (C) CaO   (D) Na_2SiO_3

6. **Night-blindness is because of deficiency of:**

   (A) vitamin A   (B) vitamin E   (C) vitamin C   (D) vitamin D

7. **The colour of hydrogen iodide is:**

   (A) orange   (B) purple   (C) red   (D) colourless

8. **Percentage of nitrogen in urea is:**

   (A) 36.6%   (B) 46.6%   (C) 56.6%   (D) 66.6%

9. **If $Q_c < K_c$ reaction proceeds:**

   (A) forward   (B) reverse   (C) equilibrium   (D) both side

10. **A disease that cause bone and tooth damage is:**

    (A) fluorosis   (B) cholera   (C) jaundice   (D) hepatitis

11. **Depending upon temperature variation, atmosphere is divided into how many regions:**

    (A) one   (B) two   (C) three   (D) four

12. **Specific heat capacity of water is:**

    (A) $4.2 \text{ KJg}^{-4}\text{K}^{-1}$ (B) $4.2 \text{ Jg}^{-1}\text{K}^{-1}$ (C) $4.4 \text{ KJg}^{-1}\text{K}^{-1}$ (D) $4.4 \text{ Jg}^{-1}\text{K}$

Roll No.(in Figures): .... (in Words): ....

Maximum Marks: 48　　　　SUBJECTIVE TYPE　　　　Time Allowed :1.45 Hours

(PART - I)

Q2. Write short answers to any FIVE (5) questions.　　　　5×2=10

i) What is meant by active mass? Also write its unit.

ii) What is meant by reversible reactions?

iii) Write down chemical equilibrium state.

iv) Define law of mass action.

v) Write two important properties of salts.

vi) Write two uses of sulphuric acid.

vii) State Arrhenius concept of acids and bases.

viii) Define adduct.

Q3. Write short answers to any FIVE (5) questions.　　　　5×2=10

i) Define carbonization.

ii) Write the name of four different types of coal.

iii) Define alcoholic group with one example.

iv) What is the difference between alkenes and alkynes?

v) Define process of hydrogenation with an example.

vi) What is the difference between oil and ghee?

vii) Write the basic unit of protein, give one example.

viii) Write the name of two disease caused by deficiency of vitamin A.

Q4. Write short answers to any FIVE (5) questions.　　　　5×2=10

(i) Name the major constituents of troposphere.

(ii) Write four natural systems of our earth (only names).

(iii) Why CO_2 is called a green house gas?

(iv) Mention the disadvantages of detergents.

(v) How water borne disease can be prevented?

(vi) Write two advantage of Solvay's process.

(vii) Define petroleum and crude oil.

(viii) Define residual oil with two fractions name.

(PART - II)

Note: Attempt any TWO questions.　　　　2×9=18

Q5. (a) Define equilibrium constant. How the extent of reaction can be predicated with the help of value of K_c?　　5

　　(b) Write down the four uses of bases.　　4

Q6. (a) Write down five physical properties of alkenes.　　5

　　(b) Write a note on Deoxyribonucleic acid (DNA).　　4

Q7. (a) What is meant by concentration of Ore? Also give two methods for concentration of Ores.　　5

　　(b) Write two methods for removal of permanent hardness of water.　　4

NOTE: Four possible answers A, B, C and D to each question are given. The choice which you think is correct, fill that circle in front of that question with Marker or Pen ink. Cutting or filling two or more circles will result in zero mark in that question.

1. The unit of molar concentration is:

(A) $mol\ dm^{-1}$ (B) $mol\ dm^{-2}$ (C) $mol\ dm^{3}$ (D) $mol\ dm^{-3}$

2. In the beginning the rate of reverse reaction is:

(A) moderate   (B) negligible   (C) slow   (D) very fast

3. A reaction between an acid and a base produces:

(A) salt and water   (B) salt and gas   (C) salt and acid   (D) salt and base

4. You want to dry a gas, which one of the following salt you will use:

(A) $COCl_2$ (B) CaO (C) $NaCl$ (D) Na_2SiO_3

5. In laboratory urea was prepared by:

(A) Berzelius   (B) Dalton   (C) Rutherford   (D) Wohler

6. Dehydration of alcohols can be carried out with:

(A) H_2SO_4 (B) HCl (C) KOH (D) $NaOH$

7. Which one of the following is a fat soluble vitamin?

(A) A   (B) E   (C) K   (D) all of these

8. General formula of carbohydrates is:

(A) $Cn(H_2O)n$ (B) $Cn(H_2O_2)n$ (C) $Cn(H_3O)n$ (D) $Cn(H_2O_3)n$

9. About 99% of atmospheric mass lies in:

(A) 16 km   (B) 17 km   (C) 30 km   (D) 35 km

10. The density of water at 4°C is:

(A) $1\ gm\ cm^{-3}$ (B) $2\ gm\ cm^{-3}$ (C) $3\ gm\ cm^{-3}$ (D) $4\ gm\ cm^{-3}$

11. Which one of the following gases is used to destroy harmful bacteria in water?

(A) bromine   (B) chlorine   (C) fluorine   (D) iodine

12. Matte is a mixture of:

(A) Cu_2S and FeS (B) CuS and FeO (C) Cu_2O and FeO (D) FeS and CuS

Roll No.(in Figures): .... (in Words): ....

Maximum Marks: 48   **SUBJECTIVE TYPE**   Time Allowed :1.45 Hours

(PART - I)

Q2. Write short answers to any FIVE (5) questions.   5×2=10

(i) Write two properties of irreversible reactions.

(ii) How atmospheric gases are used in manufacture of chemical?

(iii) Write chemical equilibrium constant for given equation. $H_{2(g)} + I_{2(g)} \rightleftharpoons 2HI_{(g)}$

(iv) What is complete reaction? How is it represented?

(v) Write two properties of bases.

(vi) According to Arrhenius, define acid, with an example.

(vii) Write two properties of salts.

(viii) Write the two uses of sodium carbonate.

Q3. Write short answers to any FIVE (5) questions.   5×2=10

(i) Define functional group.

(ii) Write classification of coal.

(iii) What are aromatic compounds? Give one example.

(iv) Why are alkenes reactive?

(v) Give two uses of ethene.

(vi) Give two characteristics of monosaccharides.

(vii) What is the significance of vitamins?

(viii) How will you justify RNA works as a messenger?

Q4. Write short answers to any FIVE (5) questions.   5×2=10

(i) Write the composition of dry air.

(ii) What are primary and secondary air pollutants?

(iii) Write two effects of ozone depletion.

(iv) Write two disadvantages of hard water.

(v) What is capillary action?

(vi) Define metallurgy.

(vii) Write name of any two fractions of petroleum.

(viii) What role is played by pine oil in the froth flotation process?

(PART - II)

Note: Attempt any TWO questions.   2×9=18

Q5. (a) Sate the law of mass action and how chemical equilibrium constant is helpful in prediction of direction of reaction?   5

    (b) Write the uses of any four bases.   4

Q6. (a) Give five physical properties of alkanes.   5

    (b) Explain the sources and uses of carbohydrates.   4

Q7. (a) How is urea manufactured? Explain with flow sheet diagram.   5

    (b) How temporary hardness of water can be removed? Explain.   4