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.

Q1. **12**

1. **Sum of pH and pOH of solution at 25°c is always:**
   (A) 14 (B) 12 (C) 10 (D) 8
2. **The first organic compound was prepared by:**
   (A) Dalton (B) Berzelluis (C) Wohler (D) Lavoisier
3. **The general formula of alkenes is:**
   (A) C_nH_{2n+2} (B) C_nH_{2n} (C) C_nH_{2n+1} (D) C_nH_{2n-2}
4. **Which one of the following is tasteless compound?**
   (A) Starch (B) Glucose (C) Fructose (D) Sucrose
5. **Which organic compounds are used as drug to control bleeding?**
   (A) Vitamins (B) Glucose (C) Lipids (D) Proteins
6. **Just above the earth's surface is:**
   (A) Mesosphere (B) Stratosphere (C) Thermosphere (D) Troposphere
7. **Swimming pools are cleaned by which process?**
   (A) Nitration (B) Hydrogenation (C) Bromination (D) Chlorination
8. **Which disease causes bones and teeth damage?**
   (A) Fluorosis (B) Hepatitis (C) Cholera (D) Jaundice
9. **The fraction of residual oil is:**
   (A) Petroleum gas (B) Petroleum ether (C) Diesel oil (D) Lubricants
10. **The colour of Iodine is:**
    (A) White (B) Red (C) Pink (D) Purple
11. **The units of molar concentration are:**
    (A) mol cm^2 (B) mol dm^3 (C) mol dm^{-3} (D) mol m^2
12. **The acid used for food preservation is:**
    (A) Sulphuric acid (B) Nitric acid (C) Hydrochloric acid (D) Benzoic acid

Rawalpindi Board 2019 (First Group)

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) Give two macroscopic characteristics of Reverse reactions.

(ii) Derive equilibrium constant expression for the synthesis of nitrogen monoxide from N_2 and O_2.

(iii) How direction of a reaction can be predicted?

(iv) Write two possibilities of chemical equilibrium state.

(v) Write names of two naturally occuring acids with their sources.

(vi) Give two uses of Magnesium hydroxide.

(vii) Define normal salts with one example.

(viii) Na_2SO_4 is a neutral salt. Write its uses.

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

(i) Classify the organic compounds on the basis of skeleton.

(ii) What is the processed of destructive distillation.

(iii) What is Isomerism?

(iv) Define process of halogenations with an example.

(v) Why alkenes are also known as olefins?

(vi) What is meant by non essential amino acids?

(vii) Define carbohydrates and write its general formula.

(viii) What is meant by genetic code of life?

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

(i) Differentiate between primary and secondary air pollutants.

(ii) How ozone layer forms in stratosphere?

(iii) State the phenomenon of decreasing temperature in troposphere.

(iv) Why non-polar compounds are insoluble in water?

(v) Differentiate between soft and hard water.

(vi) Define gravity separation method.

(vii) Describe the formation of petroleum.

(viii) Write two uses of kerosene oil.

(PART - II)

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

Q5. (a) State the law of mass action and derive the expression for equilibrium constant for a general reaction. **5**

(b) Explain Lewis concept of acids and bases with the help of examples. **4**

Q6. (a) Explain the halogenation of Mathane in diffused and direct sunlight. **5**

(b) Describe the importance of vitamins. **4**

Q7. (a) How is urea manufactured? Explain with the help of flowsheet diagram. **5**

(b) Explain the water pollution because of industrial waste. **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.

Q1. 12

1. **Temporary hardness of water is removed by adding:**
   (A) Quick lime (B) Slaked lime (C) Lime stone (D) Sodium carbonate
2. **Which gas is used to destroy harmful bacterial in water?**
   (A) Iodine (B) Chlorine (C) Fluorine (D) Bromine
3. **Crude oil is heated in furnace upto:**
   (A) 300°C (B) 350°C (C) 400°C (D) 450°C
4. **Active mass is represented by:**
   (A) ( ) (B) { } (C) [ ] (D) Ψ
5. **Equilibrium constant expression for given reaction is:** $2NO_2 \rightleftharpoons N_2O_4$
   (A) $\frac{[NO_2]^2}{[N_2O_4]}$ (B) $\frac{[N_2O_4]}{[NO_2]^2}$ (C) $\frac{[N_2O_4]}{[2NO_2]}$ (D) $\frac{[N_2O_4]}{[NO_2]}$
6. **Which salt will you use to dry a gas?**
   (A) $CaCO_3$ (B) NaCl (C) Na_2CO_3 (D) CaO
7. **What is pOH of 0.02M $Ca(OH)_2$?**
   (A) 1.698 (B) 1.397 (C) 12.31 (D) 12.61
8. **Coal gas is mixture of:**
   (A) Co and CH_4 (B) CO, CH_4 and CO_2 (C) CO, CH_4 and H_2 (D) CO, CO_2 and H_2
9. **Reduction of Alkyl halids take place in the presence of:**
   (A) Cu/HCl (B) Zn/HCl (C) Na/HCl (D) Mg/HCl
10. **Which one of the following is tasteless?**
    (A) Glucose (B) Fructose (C) Sucrose (D) Starch
11. **Amino Acids are the building blocks of:**
    (A) Carbohydrates (B) DNA (C) Lipids (D) Proteins
12. **Just above the surface of earth there is present:**
    (A) Mesosphere (B) Stratosphere (C) Troposphere (D) Thermosphere

Rawalpindi Board 2019 (Second Group)

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) Define irreversible chemical reaction.

(ii) Define equilibrium constant.

(iii) If numerical value of kc is small then predict the extent of chemical reaction.

(iv) Write equilibrium constant expression for $N_2 + 3H_2 \rightleftharpoons 2NH_3$

(v) Write two uses of pH.

(vi) Define indicator and give one example.

(vii) Define acid and base according to Arrhenius concept.

(viii) How salt is prepared by the reaction of an acid and metallic oxide.

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

(i) Define Catenation.

(ii) Write names of two aromatic compounds found in Coal Tar.

(iii) Define molecular formula and give one example.

(iv) Write general formula for saturated and unsaturated hydrocarbons.

(v) What is combustion? Give a reaction.

(vi) What are polysaccharides? Give an example.

(vii) What are the effects of accumulation of vitamin D in the body?

(viii) Write down the balanced equation for the formation of glucose.

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

(i) Define secondary pollutants and give two examples.

(ii) Define green house effect.

(iii) How does combustion of fossil fuels in internal combustion engine produce oxides of nitrogen?

(iv) Define capillary action.

(v) What is Scum?

(vi) Define electromagnetic separation.

(vii) Define calcinations with chemical equation.

(viii) How ammonia is prepared by Haber's process?

(PART - II)

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

Q5. (a) State the law of mass action and erive the expression for equilibrium constant for general reation. 5

(b) Write any four characteristic properties of salts. 4

Q6. (a) Explain saturated and unsaturated hydrocarbons with examples. 5

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

Q7. (a) What is meant by concentration of an Ore? Describe in detail the various process involved in the concentration of Ore. 5

(b) Explain the methods of removing permanent hardness of water. 4