**Balochistan Board of Intermediate and Secondary Education, Quetta**

Model Paper for HSSC Examination 2018 and Onwards

Subject: Chemistry (New Course) Total Marks = 85 Class XI

NOTE: Write same question number and its part number on answer book as given in Question paper.

**SECTION A** (12 + 06 = 18 marks)

**Attempt all parts in this section.**

Q. no. 1 :(a) Choose the correct answer.

1. One mole of diamond and one mole of Gold have same number of
   1. Neutrons b. Protons c. Electrons d. Atoms
2. Which element is not radio active
   1. Uranium b. Polonium c. Radium d. Germanium
3. Which one of the following compound is Polar
   1. H2 b. CH4 c. CCl4 d. CHCl3
4. The SI units of pressure is
   1. Atmosphere b. Pascal c. Neutron d. Torr
5. Food cook more rapidly at
   1. Karachi b. Quetta c. Murree d. Mount Everest
6. Crystalline solids are also called
   1. True Solids b. Pseudo solids c. Glasses d. Amorphous Solids
7. The reactions that occur only in one direction are called

a. Reversible Reactions b. Irreversible Reactions

c. Spontaneous Reactions d. Non-Spontaneous Reactions

1. The PH value of Tears on 7.4 and POH value is
   1. 4.7 b. 6.6 c. 7.0 d. 7.6
2. The slowest step reaction is called

a. Rate determining step b. Rate limiting step

c. Rate controlling step d. All of these

1. Which one of the following is the example of Colloid
   1. Ink b. Milk of Magnesia c. Glucose solution d. Soda water
2. Which one of the following is not the unit of heat
   1. Joule b. Kelvin c. Calorie d. Kilo Joule
3. The cell in which electrical energy is converted into chemical energy is called
   1. Electrolytic Cell b. Galvanic Cell c. Ni – Cd, Cll d. Fuel Cell

(b) Fill in the blanks with suitable words given in bracket.

1. The mass of \_\_\_\_\_\_\_\_\_\_\_\_ moles of N2 is 56 gm. (one/two)
2. Energy is \_\_\_\_\_\_\_\_ when protons jumps from lower to a higher orbit (absorbed/ released)
3. Energy is \_\_\_\_\_\_\_\_\_\_\_\_\_ when two atoms form a bond. (evolved/absorbed)
4. Partial pressure of oxygen in the \_\_\_\_\_\_\_\_ at one atmosphere is 159 Torr (lungs/air)
5. Ice occupies 10% \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ space than water. (more/less)
6. The word amorphous mean \_\_\_\_\_\_\_\_\_ (motion less/space less)

**SECTION B** (13 x 03 = 39 marks)

**Attempt any thirteen questions. Each question carry equal marks.**

Q. no. 2:

1. Define mole and Avogadro’s number.
2. How many moles are present in 25 gm of F2?
3. Why the Cathode rays are produced in the discharge tube by applying a high voltage.
4. Calculate the number of electrons in S,P and d sub – shells from the formula 2(2l+1)
5. Pi bonds are more diffused than sigma bonds. Justify it.
6. How molecular orbital theory is superior to V.S.E.P.R. and V.B.T.
7. Define pressure and give common units for pressure.
8. Why does ice float on the surface of water.
9. Why the conduction of metals decrease with the increase of temperature.
10. What is the effect of Catalyst on the rate of chemical reaction?
11. What is a conjugate acid base pair?
12. 50% of a hypothetical first order reaction completes in one hour, the remaining 50% needs product more than one hour to convert itself into product, why?
13. What is the function of soap and detergent?
14. What are exothermic and Endothermic reactions, give an example of each.
15. How does electrical series tell us the distinction between the oxidizing and reducing agent
16. How the efficiency of a chemical reaction can be calculated.
17. Give the electronic configuration of

C= 6 Na = 11 Cl=17

**SECTION C** (7 x 4 = 28 marks)

Attempt any four questions. Each question carry 07 marks. Draw diagram where necessary.

Q. no. 3: (a) Differentiate between actual yield and theoretical yield. How percentage is calculated. (04)

(b) What is the volume in dm3 of 4.75 mole of ethane gas (03)

Q.no. 4: Define Quantum numbers, Discuss principle and Azimuthal quantum number in detail. (07)

Q. no. 5 :(a) write main postulates of valence bond theory (04)

(b) How dipole moment helps us to find the geometry of molecules. (03)

Q. no. 6: (a) Derive ideal Gas equation. (04)

(b) Calculate the density of H2S gas in g/dm3 at 0°C and 960 mm of Hg pressure. (03)

Q. no. 7: (a) Kinetically how will you explain the effect of temperature on vapour pressure

(04)

(b) Write SI units of viscosity and surface tension (03)

Q. no. 8: Define Le Chatelier’s principle. What is the effect of temperature and pressure on chemical equilibrium? (07)

Q. no. 9: Differentiate between primary and secondary batteries. Also write detailed note on fuel cells. (07)

**Balochistan Board of Intermediate and Secondary Education, Quetta**

Model Paper for HSSC Examination 2017 and Onwards

Subject: Chemistry Practical (New Course) Class XI

**Minor Practicals**

**Following minor practicals are included in the syllabus.**

1. To estimate the amount of Ba+2, in the given solution of BaCl2 gravimetrically.
2. Demonstrate that gases spread by diffusion to area of lower concentration.
3. Separate the given mixture of inks by paper chromatography.
4. Prove that the loss of thermal energy when a liquid evaporates will lower the temperature of a liquid.
5. Crystallization of Benzoic acid.
6. Purification of Sodium Chloride by passing HCl gas.
7. Show the addition of Catalyst increase the rate of reaction.
8. To determine the heat of neutralization of a strong acid HCl with a strong base NaOH.

**Major Practicals**

**Following major practicals are included in the Syllabus.**

1. Determine the molarity of given solution of H2SO4 and the volume of this acid require to prepare 500 ml of 0.02 M acid by volumetric method. You are provided 0.1 M, NaOH solution.
2. Standardize the given solution of NaOH by volumetric method. You have been provided 0.1 HCl solution.
3. The given solution contains 6 gm of Na2CO3 dissolved/dm3. Determine the percentage purity of the sample solution. You are provided with 0.1 M, HCl solution.
4. Determine the value of X by volumetric method in the given sample of 6.03 gm of (COOH)2 H2O dissolved per litre. You are provided 0.1 M, NaOH solution.
5. Determine the solubility oxalic acid at room temperature. You are provided 0.1 M, NaOH solution.
6. Standardize the given solution of KMnO4 and calculate the volume of KMno4 required for preparing 1 dm3 (1 litre) of 0.01 M, KMno4 solution volumetrically. You are provided with 0.1 M, FeSO4 solution.
7. Determine the amount of Iron in the given sample volumetrically. You are provided with 0.01 M, KMno4 solution.
8. Determine the percentage composition volumetrically of a solution mixture of K2C2O4 and K2SO4. You have been provided 0.01 M, KMno4 solution. Find the percentage composition of both K2C2O4 and K2SO4 volumetrically.
9. Determine the solubility of Mohr’s salt at room temperature. You are provided 0.01 M, KMno4 solution.