



Federal Board HSSC-I Examination  
Chemistry Model Question Paper

**FBISE**

WE WORK FOR EXCELLENCE

Roll No:

Answer Sheet No: \_\_\_\_\_

Signature of Candidate: \_\_\_\_\_

Signature of Invigilator: \_\_\_\_\_

**SECTION – A**

Time allowed: 20 minutes

Marks: 17

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Note: Section-A is compulsory and comprises pages 1-6. All parts of this section are to be answered on the question paper itself. It should be completed in the first 20 minutes and handed over to the Centre Superintendent. Deleting/overwriting is not allowed. Do not use lead pencil.

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**Q.1** Insert the correct option i.e. A/B/C/D in the empty box opposite each part. Each part carries one mark.

i. Indicate the set in which all members are isoelectronic

- A.  $F^{1-}, Cl^{1-}, Br^{1-}$
- B.  $O^+, O, O^{1-}$
- C.  $Ca^{2+}, Mg^{2+}, Al^{3+}$
- D.  $F^{1-}, Na^{1+}, Ne^0$

ii. Under which set of conditions, a real gas obeys the ideal gas laws most closely.

- A. Low pressure and low temperature
- B. High pressure and high temperature
- C. Low pressure and high temperature
- D. Standard temperature and pressure

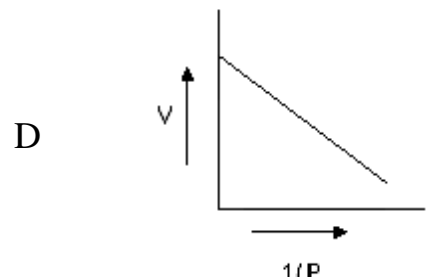
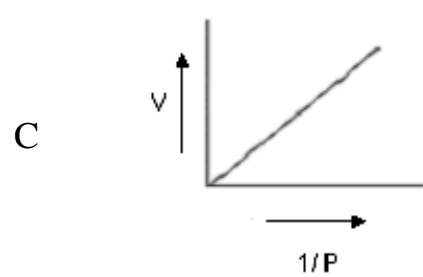
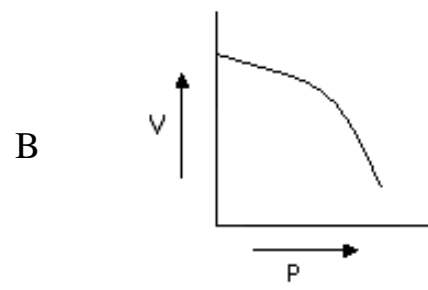
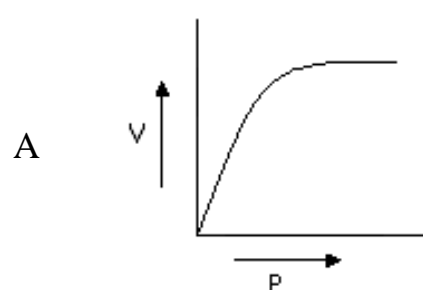
**DO NOT WRITE ANYTHING HERE**

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iii. In the graphite lattice, what is the number of nearest neighbours for each carbon atom?

- A. 3
- B. 4
- C. 5
- D. 6

iv. According to Boyle's law, volume of given mass of a gas at constant temperature is inversely proportional to its pressure. Which of the graphs depicts this law correctly?



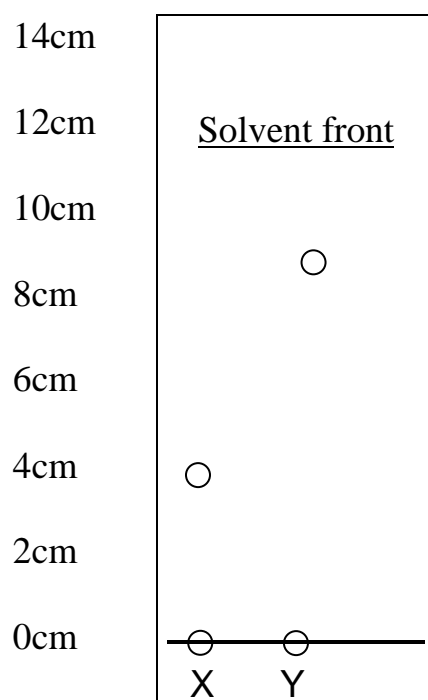
v. Which of the following relationships is true for spectral lines?

- A.  $\lambda_{\text{blue}} < \lambda_{\text{red}}$
- B.  $\nu_{\text{x-ray}} < \nu_{\text{radio waves}}$
- C.  $\nu_{\text{microwave}} > \nu_{\text{x-ray}}$
- D.  $E_{\text{visible}} > E_{\text{uv}}$

vi. Dipole moment is the measure of polarity. Which one of the following molecules is polar?

- A.  $\text{CCl}_4$
- B.  $\text{BF}_3$
- C.  $\text{CF}_4$
- D.  $\text{NF}_3$

vii. Following diagram shows the chromatogram of substance X and Y:



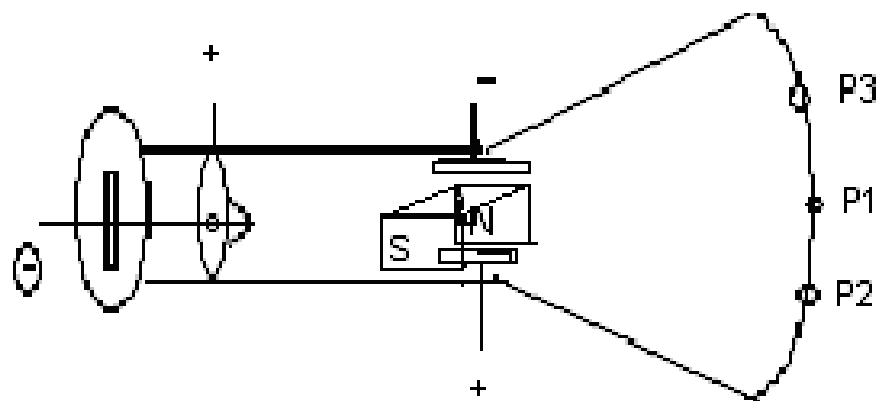
The  $R_f$  value of substance X will be

- A. 2.5
- B. 0.4
- C. 0.33
- D. 3.00

viii. The following are applied across the discharge tube:

- a. Electric field
- b. magnetic field
- c. electric and magnetic field simultaneously

Which one is true regarding the points at which cathode rays strike the photographic plate?



	Electric Field	Magnetic Field	Electric & Magnetic Field Simultaneously
A.	P1	P2	P3
B.	P3	P2	P1
C.	P2	P3	P1
D.	P2	P1	P3

ix. When two ice cubes are pressed over each other, they unite to form one cube. Which force holds them together?

- A. Covalent bond
- B. Electrostatic interaction
- C. Co-ordinate covalent bond
- D. Hydrogen bonding

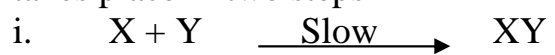
x. The enthalpy change representing the lattice energy of potassium chloride is shown by

- A.  $\text{K}_{(s)} + \frac{1}{2} \text{Cl}_{2(g)} \longrightarrow \text{KCl}_{(s)} \quad \Delta H = x$
- B.  $\text{K}^+_{(aq)} + \text{Cl}^-_{(aq)} \longrightarrow \text{KCl}_{(aq)} \quad \Delta H = y$
- C.  $\text{K}^+_{(g)} + \text{Cl}^-_{(g)} \longrightarrow \text{KCl}_{(s)} \quad \Delta H = z$
- D.  $\text{K}^+_{(g)} + \text{Cl}^-_{(g)} \longrightarrow \text{KCl}_{(g)} \quad \Delta H = w$

- xi. The solubility product values for the following salts at 25°C are:   
 $\text{PbCl}_2=1 \times 10^{-5}$   $\text{NaCl}=1 \times 10^{25}$   $\text{KCl}=1 \times 10^{23}$   $\text{ZnCl}_2=1 \times 10^{20}$   
On passing HCl gas, which one of the following salts precipitates out first?
- A. NaCl  
B.  $\text{ZnCl}_2$   
C.  $\text{PbCl}_2$   
D. KCl
- xii. The solutions that are formed by liquids whose molecules have very similar structures and intermolecular forces are:
- A. Non-ideal solutions  
B. Ideal solutions  
C. Standard solution  
D. Saturated solution
- xiii. The mutual solubility of conjugate solutions is affected by
- A. Pressure  
B. Volume  
C. Mass  
D. Temperature
- xiv. Which of the following represents the same net reaction as the electrolysis of aqueous sulphuric acid?
- A. Electrolysis of water  
B. Electrolysis of aqueous hydrochloric acid  
C. Electrolysis of sodium chloride  
D. Electrolysis of aqueous copper (II) sulphate
- xv. Which one of the following substance will conduct electric current without a chemical change?
- A. An aqueous solution  
B. An electrolyte  
C. Solid sodium chloride  
D. A liquid metal

xvi. The gaseous reaction:  $2X + Y \longrightarrow X_2Y$

takes place in two steps



The rate equation for the reaction is given by

- A. Rate =  $K [X]^2$
- B. Rate =  $K [Y]^2$
- C. Rate =  $K [X]^2[Y]$
- D. Rate =  $K [X][Y]$

xvii. Molar mass of any substance contains Avogadro No. of particles. The largest number of atoms are present in

- A. 1.8g of  $C_{12}H_{22}O_{11}$
- B. 8g of  $CaCO_3$
- C. 6g of  $NaNO_3$
- D. 4g of  $H_2$

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For Examiner's use only

Q. No.1: Total Marks:

17

Marks Obtained: