

# Model Answers

Choose the correct answer:

1- Which of the following solutions has the highest boiling point?

- a- Sodium Carbonate's concentration 1M
- b- Sodium Carbonate's concentration 2M
- c- Iron Chloride (III) 's concentration 1M
- d- Iron Chloride (III) 's concentration 2M

2- Total number of atoms in a half mole of Formaldehyde HCHO:

- a- Avogadro's number
- b- Half Avogadro's number
- c- Double Avogadro's number
- d- Quarter Avogadro's number

3- At dissolving 55.5 gm of Calcium Chloride in 0.5 L of water, the solution concentration becomes: (Ca=40, Cl=35.5)

- a- 1M
- b- 0.5M
- c- 2M
- d- 1.5M

4- At performing an experiment to find the chemical formula, Element A=40%, Element B=12% (A=40, B=12, C=16), therefore, the empirical formula of the compound:

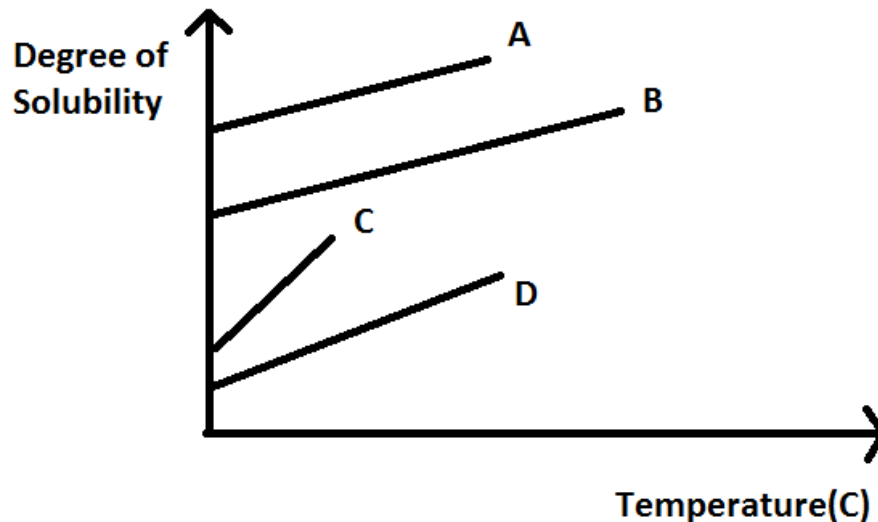
a- ABC<sub>3</sub>

b- A<sub>3</sub>BC

c- AB<sub>3</sub>C

d- A<sub>2</sub> B<sub>2</sub>C

5- A Graph represents the relationship between degree of solubility of some substances and the temperature of solvent, which of these substances increases its solubility directly with the increase of the temperature of the solvent?



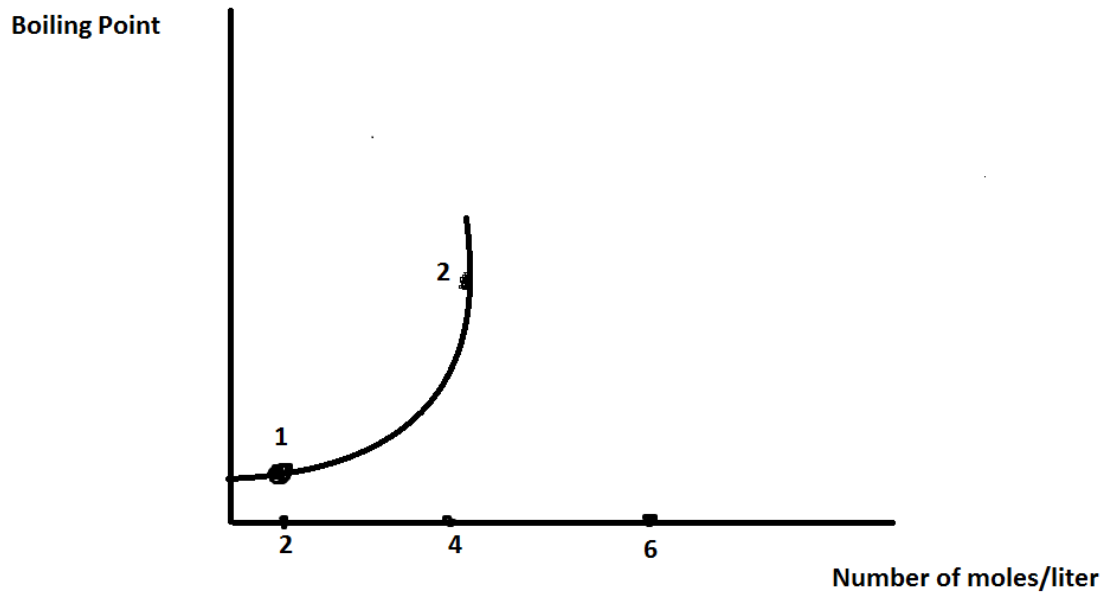
a- B

b- C

c- D

d- A

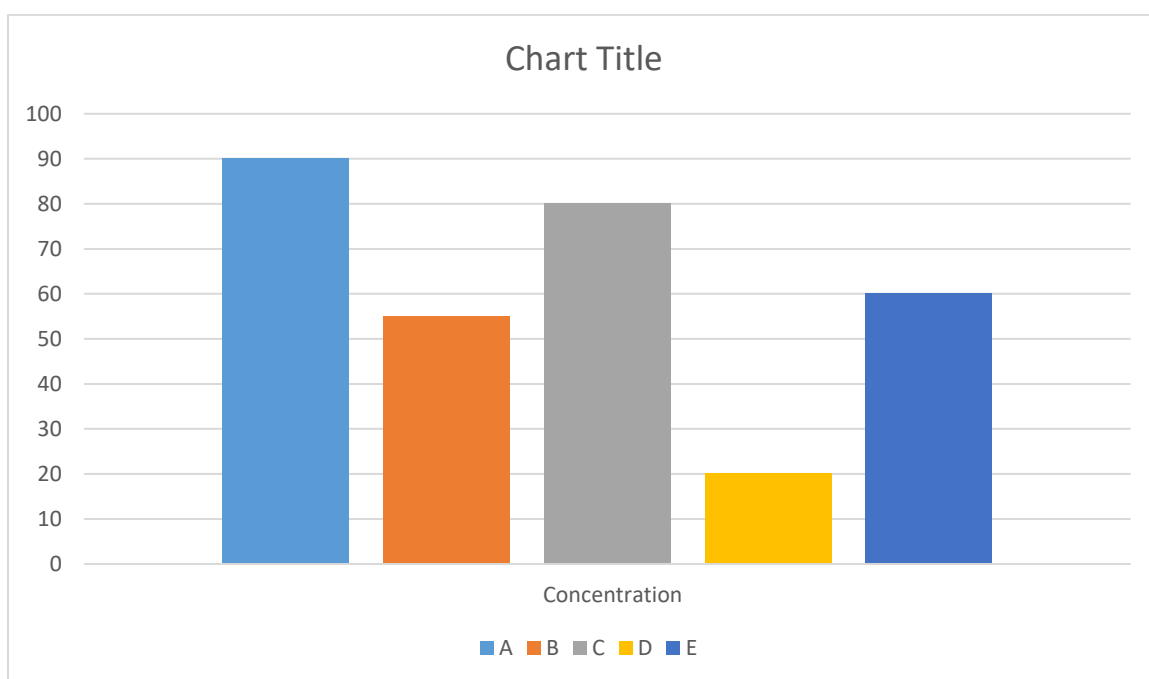
6- In the following diagram, If the solutions have the same concentration, so, the solutions that represent the numbers 1 and 2 respectively



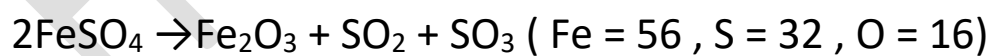
- a- Sodium Chloride solution and Glucose solution
- b- Sodium Chloride solution and Aluminum Nitrate solution
- c- Potassium Carbonate solution and Glucose solution
- d- Potassium Carbonate solution and Aluminum Nitrate solution

7- In the graph Which compounds ( A, B , C , D , E ) indicate the ionization of organic acid in water?

D, because the organic acid is weakly ionized in water



8- Calculate the number of moles of  $\text{Fe}_2\text{O}_3$  which resulted from heating 456g of  $\text{FeSO}_4$  according to this equation:



2 moles  
3 moles

1 moles  
x

no. of moles in 456g of  $\text{FeSO}_4$   
 $= 456 / 56 + 32 + 16 \times 4 = 3 \text{ moles}$

$$X = 3 \times 1 / 2 = 1.5 \text{ moles}$$

9- The graph represent the relation between the amount of magnesium and hydrochloric acid with the time taken by the reaction.

What is the time taken to consume the half quantity of magnesium?

The time = 2 sec because the total amount consumed at 4sec.

10- Write the chemical formula of compound gives solution with pH > 7

CH<sub>3</sub>Coo<sup>-</sup>Na

11- Rearrange the following acids according to basicity in ascending order.

H<sub>3</sub>BO<sub>3</sub>, HCN, H<sub>2</sub>SO<sub>4</sub>

3          1          2

12- Write the conjugate acid and base according to Bronsted – Lowery theory

