

**KANNUR DISTRICT PANCHAYATH MUKULAM**  
**SSLC MODEL EXAMINATION JAN. 15**  
**CHEMISTRY-10**

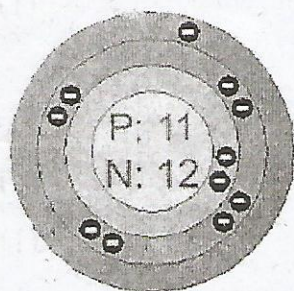
Score – 40

1. There are three blown up balloons of the same size. The methods used to increase the volume again are given below.
- i. First one is blown up more
  - ii. Second one is placed in the sun light
  - iii. Third one is put to a height.
    - a. State the gas laws associated with each case. (3)
    - b. Write the mathematical representation of the law related to the third case. (1)
2. The Structural formula of an organic compound is given.
- A.  $\text{CH}_3 - \text{CH}_2 - \text{CH}_2 - \text{OH}$
- a. Write the functional group of this compound (1)
  - b. Write the IUPAC Name (1)
  - c. Write the position isomer of this compound (1)
  - d. Write the structural formula of its next homologue (1)

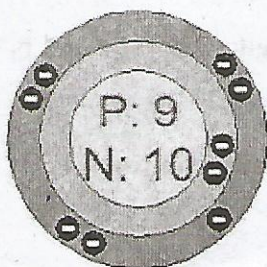
OR

- B. Structure of two compounds are given below. Analyse the structure and answer the questions.
- i.  $\text{CH}_3 - \text{CH}_2 - \text{CH}_2 - \text{OH}$
  - ii.  $\text{CH}_3 - \text{CH}_2 - \text{O} - \text{CH}_3$
- a. Write a similarity and a difference between the above compounds (1+1)
  - b. By which name does this type of compounds known? (1)
  - c. Write the IUPAC name of the second compound (1)
3. The reactivity of some elements are given  
 $\text{Mg} > \text{Al} > \text{Fe}$ .
- a. Which of the above metals can displace Aluminium from its salt solution (1)
  - b. Draw the diagram of the cell which can give the maximum cell voltage if the above metals are used as electrodes. Label its parts. (2)

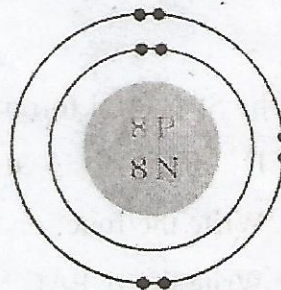
- c. Write the equation for the cathode reaction of this cell. (1)
4. If two pieces of cotton dipped in spirit and water having the same temperature are placed on our body. Spirit makes our body feel cooler. Name the phenomenon associated with this (1)
5. The equation showing the burning of ethane is given below  
 $2C_2H_6 + 7O_2 \rightarrow 4CO_2 + 6H_2O$
- a. How many moles of  $CO_2$  are formed on complete combustion of one mole of ethane? (1)
- b. Find the mass of water formed on complete burning of 60g of ethane. (1)  
 (Atomic Mass: H=1, C=12)
6. The Bohr models of three elements P, Q and R are given (Symbols are not real)



P



R



Q

- a. Write the subshell electronic configuration of Q (1)
- b. Which of the above elements has the lowest Ionization Energy? (1)
- c. Which type of chemical bond is formed between P and R  
 (Electronegativity : P=0.9, Q = 4.0, R:3.5)
7. The equation of a reversible reaction is given.  
 $H_2 + I_2 \rightleftharpoons 2HI + \text{Heat}$
- a. Balance the equation
- b. What change in temperature is to be made on this system at equilibrium to increase the amount of product. Explain using Le-Chatelier's Principle. (2)
- c. What is the effect of pressure on this equilibrium? (1)
8. Aluminium is manufactured by electrolytic method.
- a. Which is the electrolyte used? (1)

- b. Write the equation of reduction reaction taking place in the cell. (2)
9. Ethanol is an important industrial chemical.
- a. How can we prepare ethanoic acid from ethanol? (1)
- b. What is the difference between glacial acetic acid and vinegar. (2)
10. The formula of some chemicals available in the lab are given in the box

FeSO <sub>4</sub>	BaCl <sub>2</sub>	CaCO <sub>3</sub>	AgNO <sub>3</sub>
BaCO <sub>3</sub>	Con HNO <sub>3</sub>		

How can you identify between Hydrochloric acid and sulphuric acid taken in two test tubes using the above chemicals. (2)

11. The molecular formula of Butane is C<sub>4</sub>H<sub>10</sub>
- a. Find the molecular mass of Butane (1)
- b. How many moles will be there in 29g butane? (1)
- c. What will be volume at STP of the above sample? (1)
- d. What will be the mass of CO<sub>2</sub> having the same volume at STP? (1)
- (Atomic Mass: H=1, C=12, O=16)

12. An atom of 4<sup>th</sup> period has 3 electrons in the 'd' subshell.
- a. What is its atomic number? (1)
- b. To which group does this atom belong? (1)

13. Match the following.

A		B	
i	CH <sub>3</sub> -CH=CH <sub>2</sub> + HCl	a	H <sub>2</sub> O + CO <sub>2</sub>
ii	CH <sub>3</sub> -CH <sub>2</sub> -CH <sub>3</sub> + O <sub>2</sub>	b	<sub>1</sub> Cl CH <sub>3</sub> -CH-CH <sub>3</sub>
iii	CH <sub>3</sub> -CH <sub>2</sub> -CH <sub>3</sub> + Cl <sub>2</sub>	c	CH <sub>4</sub> +C <sub>2</sub> H <sub>4</sub>
		d	<sub>1</sub> Cl CH <sub>3</sub> -CH-CH <sub>3</sub> + HCl

(3)

14. Discussions are going on today regarding the irrational use of chemicals.

- a. Write any one disadvantage of chemical insecticides
- b. "Chemistry is not a problem but a way of solving the problem". Justify

(2)