



XI-SCI : Chemistry  
Elements of Group 1 and Group 2,

DATE:

TIME: 1 hour 30  
minutes

MARKS: 25

SEAT NO:

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**Note:-**

1. All Questions are compulsory.
2. Numbers on the right indicate full marks.

**Section A**

**Q.1 Select and write the correct answer.**

**(4)**

1. Choose the incorrect statement .....  
A) Alkaline earth metals are good reducing agents  
B) Ber resembles aluminium closely in its properties though it belongs to a different group  
C) Beryllium is more electropositive than magnesium  
D) The electronegativities of alkaline earth metals decrease with atomic numbers
2. In the elements of group 1, the last electron enters into \_\_\_\_\_ subshell.  
A) np                      B) ns  
C) nd                      D) None of the above
3. The most reactive elements is  
A) Be                      B) Ba  
C) Sr                      D) Mg
4. Choose the correct option with respect to electropositivity.  
A) Cs > Rb > Na > Li    B) Be > Mg > Ca > Sr  
C) Cs < Rb < Na < Li    D) Be < Mg < Ca < Sr

**Q.2 Answer the following.**

**(3)**

1. Dihydrogen reactions take place at high temperature? Justify.
2. What is the oxidation state of Na in  $\text{Na}_2\text{O}_2$ ?
3. What happens when  $\text{H}_2\text{O}_2$  mixes with water?

**Section B**

**Attempt any Four**

- Q.3 Compounds of group 1 and 2 elements are diamagnetic. Explain. **(2)**
- Q.4 Comment on the trends in properties of elements of group 1 and 2. **(2)**
- Q.5 Write the commercial method of preparation of caustic soda. **(2)**
- Q.6 What happens when sulphuric acid undergoes electrolysis? **(2)**
- Q.7 What happens when water gas reacts with olefins? **(2)**
- Q.8 Write the formulae of compounds of hydrogen formed with sodium and chlorine. **(2)**

**Section C**

**Attempt any Two**

- Q.9 Write balanced chemical equation –  $\text{CO}_2$  is passed into concentrated solution of  $\text{NaCl}$ , which is saturated with  $\text{NH}_3$  (3)
- Q.10 Explain the preparation of hydrogen peroxide from 2-ethylanthraquinol. (3)
- Q.11 Outline the industrial production of dihydrogen from steam. Also write the chemical reaction involved. (3)

**Section D**  
**Attempt any One**

- Q.12 Write uses of dihydrogen. (4)
- Q.13 Explain the observed values 496 kJ/mol and 737 kJ/mol of the first ionization enthalpies of Na and Mg, respectively. (4)