

+3 3rd semester chemistry  
MCQs Questions. For s and p-  
Block elements.

- 1) Boron shows diagonal relation with  
(a) Al (b) C (c) Si (d) Sn
- 2) Which one of the following is least basic?  
(a)  $\text{NCl}_3$  (b)  $\text{NBr}_3$  (c)  $\text{NI}_3$  (d)  $\text{NF}_3$
- 3) Which of the following has maximum ionisation potential?  
(a) Al (b) P (c) Si (d) Mg
- 4) Arrange the following hydrides of group 16 elements in order of increasing stability.  
(a)  $\text{H}_2\text{S} < \text{H}_2\text{O} < \text{H}_2\text{Te} < \text{H}_2\text{Se}$   
(b)  $\text{H}_2\text{O} < \text{H}_2\text{Te} < \text{H}_2\text{Se} < \text{H}_2\text{S}$   
(c)  $\text{H}_2\text{O} < \text{H}_2\text{S} < \text{H}_2\text{Se} < \text{H}_2\text{Te}$   
(d)  $\text{H}_2\text{Te} < \text{H}_2\text{Se} < \text{H}_2\text{S} < \text{H}_2\text{O}$
- 5) Fluorine differs from rest of the halogens in some of its properties. This is due to



- (a) its small size and high electronegativity.
- (b) lack of d-orbitals.
- (c) low bond dissociation energy.
- (d) All of these.

6. The increasing order of reducing power of the halogen acids is

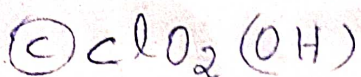
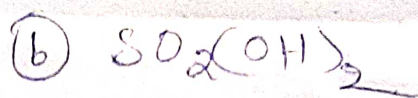
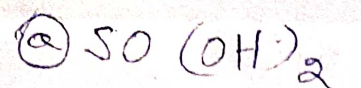
- (a)  $\text{HF} < \text{HCl} < \text{HBr} < \text{HI}$
- (b)  $\text{HI} < \text{HBr} < \text{HCl} < \text{HF}$
- (c)  $\text{HBr} < \text{HCl} < \text{HF} < \text{HI}$
- (d)  $\text{HCl} < \text{HBr} < \text{HF} < \text{HI}$

7. Which statement is correct about halogens?

- (a) They are all diatomic and form univalent ions.
- (b) They are all capable of exhibiting several oxidation states.
- (c) They are all diatomic and form diatomic ions.
- (d) They are all reducing agents.

8. Which one of the following is the strongest acid?





(9)  $CaOH$  is

(a) strongly basic

(b) weakly basic

(c) slightly acidic

(d) Amphoteric

(10) What are Oxo-acids?

(a) Acid containing sulphur.

(b) Acid containing oxygen.

(c) Acid containing carbon.

(d) None of the above.

(11) Which of the following alkali metals has the least melting point?

(a) Na

(b) K

(c) Rb

(d) Cs

(12) The super oxides of alkali metals are generally represented by

(a)  $M_2O$

(b)  $M_2O_2$

(c)  $MO_2$

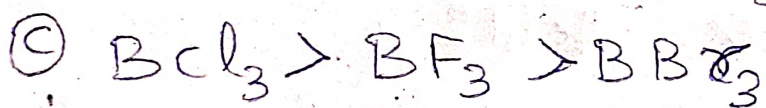
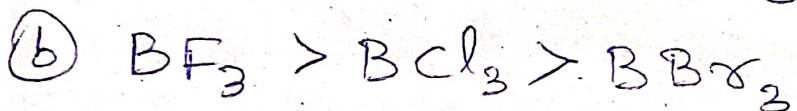
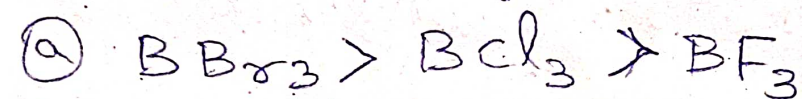
(d)  $M_2O_3$



13) Which of the alkaline earth metal has radioactive nature?

- (a) Be    (b) Sr    (c) Mg    (d) Ra

14) Which is the correct order of decreasing acidity of Lewis acids?



15) Which does not show inert pair effect?

- (a) Al    (b) Sn    (c) Pb    (d) Thallium



+3<sup>rd</sup> sem.  
chem (H)

## S- and P-Block Elements. Objective Questions.

- 1) Although Li has small size and high ionisation energy, it is stronger reducing agent than other alkali metals. why?
- 2) Give and explain the trend of ionisation energy of Alkali metals down the group.
- 3) Why  $B^{3+}$  ions are not formed.
- 4) Water is a liquid but hydrogen sulphide is a gas. Why?
- 5) What is the trend of stability of reducing nature of hydrides of elements of oxygen family?
- 6) Oxygen does not show +4 and +6 oxidation states like sulphur. why?
- 7) Fluorine does not exhibit any positive oxidation state. why?
- 8) Define inert pair effect with example.
- 9) What is diagonal relationship? Explain.



- ⑩ Define allotropy, Name different allotropic forms of Phosphorus.
- ⑪ Give the anomalous behaviour of beryllium among its family members.
- ⑫ What are hydrides?, Explain interstitial hydrides with an example.
- ⑬ Give the chemistry of Basic Beryllium acetate.
- ⑭ What are covalent hydrides?, Give one example.
- ⑮  $N^{3-}$  and  $P^{3-}$  anions exist but  $As^{3-}$ ,  $Sb^{3-}$  and  $Bi^{3-}$  anions do not. Why?



# Long Questions

No.

- ① What is inert pair effect? How it explains that  $\text{Bi}^{5+}$  is stronger oxidant than  $\text{P}^{5+}$  and  $\text{TlCl}$  is more stable than  $\text{InCl}$ ?
- ② Describe the relative stability of different oxidation states of s and p-block elements.
- ③ Give the anomalous behaviour of Li with 2<sup>nd</sup> group elements Na, K etc.
- ④ What do you understand by the term catenation? Write elements which show this property and explain that.
- ⑤ Give the preparation, properties and structure of beryllium acetate.
- ⑥ What are hydrides? How are these classified? Give their chemistry.
- ⑦ Define the term allotropy. Explain various allotropic forms of group 16 elements.
- ⑧ Explain the anomalies in elements of first and second row in the periodic table.