

**CHEMISTRY**  
The p-Block Elements  
(Part – A)



1. Match the List I with List II. (2023)

List I (Hydride)		List II (Type of Hydride)	
A.	NaH	I.	Electron precise
B.	PH <sub>3</sub>	II.	Saline
C.	GeH <sub>4</sub>	III.	Metallic
D.	LaH <sub>2.87</sub>	IV.	Electron rich

Choose the correct answer from option given below:

- (a) A-III, B-IV, C-II, D-I  
(b) A-II, B-III, C-IV, D-I  
(c) A-I, B-III, C-II, D-IV  
(d) A-II, B-IV, C-I, D-III

2. Match List I with List II:

List I		List II	
A.	Coke	I.	Carbon atoms are sp <sup>3</sup> hybridised
B.	Diamond	II.	Used as a dry lubricant
C.	Fullerene	III.	Used as a reducing agent
D.	Graphite	IV.	Cage like molecules

Choose the correct answer from the options given below: (2023)

- (a) A-IV, B-I, C-II, D-III  
(b) A-III, B-I, C-IV, D-II  
(c) A-III, B-IV, C-I, D-II  
(d) A-II, B-IV, C-I, D-III

3. The element expected to form largest ion to achieve the nearest noble gas configuration is (2023)

- (a) F (b) N  
(c) Na (d) O

4. Match List I with List II:

List I (Oxoacids or Sulphur)		List II (Bonds)	
A.	Peroxodisulphuric acid	I.	Two S-OH, Four S=O, One S-O-S
B.	Sulphuric acid	II.	Two S-OH, One S=O
C.	Pyrosulphuric acid	III.	Two S-OH, Four S=O, One S-O-O-S
D.	Sulphurous acid	IV.	Two S-OH, Two S=O

Choose the correct answer from the option given below: (2023)

- (a) A-III, B-IV, C-I, D-II  
(b) A-I, B-III, C-IV, D-II  
(c) A-III, B-IV, C-II, D-I  
(d) A-I, B-III, C-II, D-IV

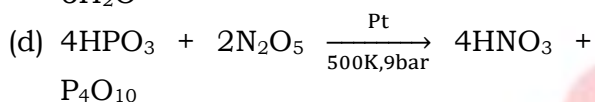
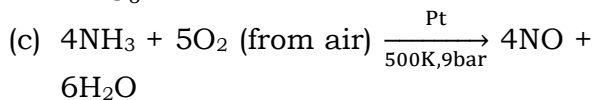
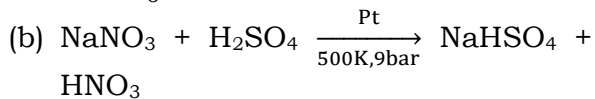
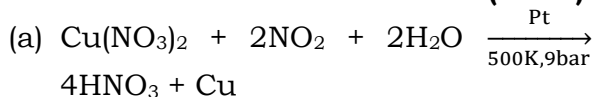
5. Match List I with List II:

List I (Compounds)		List II (Molecular formula)	
A.	Borax	I.	NaBO <sub>2</sub>
B.	Kernite	II.	Na <sub>2</sub> B <sub>4</sub> O <sub>7</sub> .4H <sub>2</sub> O
C.	Orthoboric acid	III.	H <sub>3</sub> BO <sub>3</sub>
D.	Borax bead	IV.	Na <sub>2</sub> B <sub>4</sub> O <sub>7</sub> .10H <sub>2</sub> O

Choose the correct answer from the options given below: (2022)

- (a) A-I, B-III, C-IV, D-II  
(b) A-IV, B-II, C-III, D-I  
(c) A-II, B-IV, C-III, D-I  
(d) A-III, B-I, C-IV, D-II

6. Which of the following reactions is a part of the large-scale industrial preparation of nitric acid? **(2022)**



7.  $\text{Na}_2\text{B}_4\text{O}_7 \xrightarrow{\text{heat}} \text{X} + \text{NaBO}_2$   
In the above reaction the product "X" is: **(2022)**

- (a)  $\text{NaB}_3\text{O}_5$  (b)  $\text{H}_3\text{BO}_3$   
(c)  $\text{B}_2\text{O}_3$  (d)  $\text{Na}_2\text{B}_2\text{O}_5$

8. Match List I with List II.

List I (Hydrides)		List II (Nature)	
A.	$\text{MgH}_2$	I.	Electron precise
B.	$\text{GeH}_4$	II.	Electron deficient
C.	$\text{B}_2\text{H}_6$	III.	Electron rich
D.	$\text{HF}$	IV.	Ionic

Choose the correct answer from the options given below: **(2022)**

- (a) A-IV, B-I, C-II, D-III  
(b) A-III, B-I, C-II, D-IV  
(c) A-I, B-II, C-IV, D-III  
(d) A-II, B-III, C-I, D-IV

9. Which of the following statement is not correct about diborane? **(2022)**

- (a) There are two 3-centre-2-electron bonds  
(b) The four terminal B-H bonds are two centre two electron bonds  
(c) The four terminal Hydrogen atoms and the two Boron atoms lie in one plane  
(d) Both the Boron atoms are  $sp^2$  hybridised

10. Given below are two statements.

**Statement I:** The boiling points of the following hydrides of group 16 elements increases in the order-  
 $\text{H}_2\text{O} < \text{H}_2\text{S} < \text{H}_2\text{Se} < \text{H}_2\text{Te}$

**Statement II:** The boiling points of these hydrides increase with increase in molar mass.

In the light of above statements, choose the most appropriate answer from options given below: **(2022)**

- (a) Both Statement I and Statement II are correct.  
(b) Both Statement I and Statement II are incorrect.  
(c) Statement I is correct but Statement II is incorrect.  
(d) Statement I is incorrect but Statement II is correct.

11. Identify the correct statements from the following: **(2020)**

- (1)  $\text{CO}_2(\text{g})$  is used as refrigerant for ice-cream and frozen food.  
(2) The structure of  $\text{C}_{60}$  contains twelve six carbon rings and twenty five carbon rings.  
(3) ZSM-5, a type of zeolite, is used to convert alcohols into gasoline.  
(4) CO is colorless and odourless gas.  
(a) 1 and 3 only  
(b) 2 and 3 only  
(c) 3 and 4 only  
(d) 1, 2 and 3 only

12. Match the following : **(2020)**

	Oxide	Nature
A.	CO	(i) Basic
B.	BaO	(ii) Neutral
C.	$\text{Al}_2\text{O}_3$	(iii) Acidic
D.	$\text{Cl}_2\text{O}_7$	(iv) Amphoteric

Which of the following is correct option?

- (A) (B) (C) (D)  
(a) (ii) (i) (iv) (iii)  
(b) (iii) (iv) (i) (ii)  
(c) (iv) (iii) (ii) (i)  
(d) (i) (ii) (iii) (iv)

13. Which of the following is not correct about carbon monoxide? **(2020)**

- (a) It reduces oxygen carrying ability of blood.  
(b) The carboxyhaemoglobin (haemoglobin bound to CO) is less stable than oxyhaemoglobin.  
(c) It is produced due to incomplete combustion.  
(d) It forms carboxyhaemoglobin.

14. Which of the following oxide is amphoteric in nature?

**(2020 Covid Re-NEET)**

- (a)  $\text{SiO}_2$  (b)  $\text{GeO}_2$   
(c)  $\text{CO}_2$  (d)  $\text{SnO}_2$

15. Which of the following species is not stable? **(2019)**  
 (a)  $[SiF_6]^{2-}$  (b)  $[GeCl_6]^{2-}$   
 (c)  $[Sn(OH)_6]^{2-}$  (d)  $[SiCl_6]^{2-}$
16. Which of the following is incorrect statement? **(2019)**  
 (a)  $PbF_4$  is covalent in nature  
 (b)  $SiCl_4$  is easily hydrolysed  
 (c)  $GeX_4$  (X = F, Cl, Br, I) is more stable than  $GeX_2$   
 (d)  $SnF_4$  is ionic in nature
17. The correct order of atomic radii in group 13 elements is **(2018)**  
 (a)  $B < Al < In < Ga < Tl$   
 (b)  $B < Al < Ga < In < Tl$   
 (c)  $B < Ga < Al < In < Tl$   
 (d)  $B < Ga < Al < Tl < In$
18. Which one of the following elements is unable to form  $MF_6^{3-}$  ion? **(2018)**  
 (a) Ga (b) Al  
 (c) In (d) B
19. It is because of inability of  $ns^2$  electrons of the valence shell to participate in bonding that : **(2017-Delhi)**  
 (a)  $Sn^{4+}$  is reducing while  $Pb^{4+}$  is oxidising  
 (b)  $Sn^{2+}$  is reducing while  $Pb^{4+}$  is oxidising  
 (c)  $Sn^{2+}$  is oxidising while  $Pb^{4+}$  is reducing  
 (d)  $Sn^{2+}$  and  $Pb^{2+}$  are both oxidising and reducing
20. The tendency to form monovalent compounds among the Group 13 elements is correctly exhibited in: **(2017-Gujarat)**  
 (a)  $B \approx Al \approx Ga \approx In \approx Tl$   
 (b)  $B < Al < Ga < In < Tl$   
 (c)  $Tl < In < Ga < Al < B$   
 (d)  $Tl \approx In < Ga < Al < B$
21. Boric acid is an acid because its molecule: **(2016-II)**  
 (a) Accept  $OH^-$  from water releasing proton  
 (b) Combines with proton from water molecule  
 (c) Contains replaceable  $H^+$  ion  
 (d) Gives up a proton
22.  $AlF_3$  is soluble in HF only in presence of KF. It is due to the formation of: **(2016-II)**  
 (a)  $K_3[AlF_3H_3]$  (b)  $K_3[AlF_6]$   
 (c)  $AlH_3$  (d)  $K[AlF_3H_3]$
23. The stability of +1 oxidation state among Al, Ga, In and Tl increases in the sequence: **(2015 Re)**  
 (a)  $In < Tl < Ga < Al$   
 (b)  $Ga < In < Al < Tl$   
 (c)  $Al < Ga < In < Tl$   
 (d)  $Tl < In < Ga < Al$
24. Which of these is not a monomer for a high molecular mass silicone polymer? **(2013)**  
 (a)  $MeSiCl_3$  (b)  $Me_2SiCl_2$   
 (c)  $Me_3SiCl$  (d)  $sPhSiCl_3$
25. The basic structural unit of silicates is: **(2013)**  
 (a)  $SiO$  (b)  $SiO_4^{4-}$   
 (c)  $SiO_3^{2-}$  (d)  $SiO_4^{2-}$
26. Which of the following structure is similar to graphite? **(2013)**  
 (a) BN (b) B  
 (c)  $B_4C$  (d)  $B_2H_6$