BYJU'S Study Planner for Board Term I
(CBSE Grade 12)

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Subject: Chemistry

Topic : P-block elements

Class: Standard XII

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1. The noble gases have closed-shell electronic configuration and are monoatomic gases under normal conditions. The low boiling points of the lighter noble gases are due to weak dispersion forces between the atoms and the absence of other interatomic interactions.
   The direct reaction of xenon with fluorine leads to a series of compounds with oxidation numbers $+2, +4$ and $+6$. XeF_4 reacts violently with water to given XeO_3. The compounds of xenon exhibit rich stereochemistry and their geometries can be deducted considering the total number of electron pairs in the valence shell.

   Argon is used in arc welding because of its

   A. Low reactivity with metal

   B. Ability to lower the melting point of metal

   C. Flammability

   D. High caloric value

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   The structure of XeO_3 is

   A. Linear

   B. Planar

   C. Pyramidal

   D. T-shaped

3. The noble gases have closed-shell electronic configuration and are monoatomic gases under normal conditions. The low boiling points of the lighter noble gases are due to weak dispersion forces between the atoms and the absence of other interatomic interactions.
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   XeF_4 and XeF_6 are expected to be

   A. Oxidizing

   B. Reducing

   C. Unreactive

   D. Strongly basic

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4. Which of the following analogies is correct regarding NH_3

BF_3 : Lewis acid :: NH_3 _____?

A. Lewis acid

B. Lewis base

C. Bronsted acid

D. Bronsted base

5. Match the correct combination :

Column I	Column II
A) B_2H_6	P) Lewis acid
B) BF_3	Q) Tetrahedral
C) $AlCl_3$	R) sp^3 hybridisation
D) BH_4^-	S) Planar molecule

A. $A \rightarrow P, Q, R;\ B \rightarrow P, S;\ C \rightarrow P, S;\ D \rightarrow Q, R$

B. $A \rightarrow P, S;\ B \rightarrow P, S;\ C \rightarrow Q, R;\ D \rightarrow P, S$

C. $A \rightarrow Q, R;\ B \rightarrow P, S;\ C \rightarrow R, S;\ D \rightarrow P, S$

D. $A \rightarrow P, S;\ B \rightarrow P, S;\ C \rightarrow Q, R;\ D \rightarrow R, S$

6. Directions : In the following questions, A statement of Assertion (A) is followed by a statement of
Reason (R). Mark the correct choice as.

Assertion (A) : N_2 is less reactive than P_4.
Reason (R) : Nitrogen has more electron gain enthalpy than phosphorus.

A. Both A and R are true and R is the correct explanation of A

B. Both A and R are true but R is NOT the correct explanation of A

C. A is true but R is false

D. A is false and R is True

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7. Assertion (A) : Group 18 gases exhibit very high ionisation enthalpy.
Reason (R) : They have a stable electronic configuration.

   A. Both A and R are true and R is the correct explanation of A

   B. Both A and R are true but R is NOT the correct explanation of A

   C. A is true bur R is false

   D. A is false and R is True

8. The product obtained on passing excess carbon dioxide through lime water is ___

   A. $CaCO_3$

   B. $Ca(HCO_3)_2$

   C. $CaHCO_3$

   D. Ca_2CO_3

9. Group 13 elements react with dinitrogen at high temperature to form :

   A. Nitrides

   B. Nitrates

   C. Nitrites

   D. None of the above

10. Aluminium (III) chloride forms a dimer through

   A. Chlorine bridging

   B. hydrogen bond

   C. Aluminium bridging

   D. (a) and (c) above.

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11. Boric acid on heating gives:

A. B_2O_3

B. $H_2B_4O_7$

C. H_2BO_3

D. None of the above

12. Name the ore of tin and lead.

A. Cassiterite, galena

B. Galena, bauxite

C. Magnetite , cassiterite

D. Galena, Hematite

13. The most commonly used reducing agent among the following is

A. $AlCl_3$

B. $PbCl_2$

C. $SnCl_4$

D. $SnCl_2$

14. In a Buckminsterfullerene (C_{60}) :

A. Carbons in five membered rings have sp^3 hybridization

B. Carbons of six membered rings have sp hybridization

C. All carbons are identical and have sp^2 hybridization.

D. (a) and (b) above.

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15. Carbon dioxide molecule contains

A. single covalent bond

B. double covalent bond

C. triple covalent bond

D. ionic bond

16. Which one of the following is most stable ?

A. Al^+

B. Ga^+

C. In^+

D. Tl^+

17. Boron has an extremely high melting point because of:

A. The strong van der waals forecs between its atoms

B. Due to very strong crystalline lattice.

C. Its ionic crystal structure

D. Allotropy

18. The correct order of atomic radii in group 13 elements is

A. $B < Ga < Al < In < Tl$

B. $B < Al < Ga < Tl < In$

C. $Ga < Al < Tl < In < B$

D. $B < In < Al < Tl < Ga$

19. Which one of the following allotropc forms of carbon is isomorphous with crystalline silicon?

A. Graphite

B. Coal

C. Coke

D. Diamond

20. Assertion (A) : F_2 has lower reactivity.
Reason (R) : F - F bond has low $\Delta_{bond}H^\circ$.

A. Both A and R are true and R is the correct explanation of A

B. Both A and R are true but R is NOT the correct explanation of A

C. A is true but R is false

D. A is false and R is True