NEET : CHAPTER WISE TEST-4

SUBJECT :- CHEMISTRY **DATE.....**
CLASS :- 12th **NAME.....**
CHAPTER :- P-BLOCK **SECTION.....**

(SECTION-A)

1. In group 15, the melting points of the elements :
(A) increase regularly on moving down the group.
(B) decrease regularly on moving down the group.
(C) first decrease upto As and then increase to Bi.
(D) first increase from N to As and then decrease to Bi.

2. Which of the following statements is incorrect for the group 15th elements ?
(A) Metallic character increases down the group with decrease in ionisation enthalpy and increase in atomic size.
(B) The stability of +5 oxidation state decreases and that of +3 state increases down the group on account of inert pair effect.
(C) The tendency to undergoes –3 oxidation state decreases down the group due to increase in size and metallic character.
(D) In case of phosphorus compounds having +4 oxidation state disproportionates into +5 and +3 both in acid and alkali.

3. Single N-N bond is weaker than the single P-P bond . This is because of :
(A) larger N-N bond length in comparision to P-P bond length .
(B) high interelectronic repulsion of the non-bonding electrons, owing to the small N-N bond length in comparision to that in P-P single bond .
(C) higher electronegetivity of N in comparision to P.
(D) samaller atomic size of N as compared to that of P.

4. Among the members of group 15 (N, P, As, Sb and Bi), which of the following properties show an increase as we go down from nitrogen to bismuth
(A) Stability of +5 oxidation state
(B) Reducing character of hydrides
(C) Electronegativity
(D) Acidic nature of the pentoxide

5. The oxidation number of sulphur in S_8, S_2F_2 and H_2S respectively are :
(A) 0, + 1 and – 2
(B) + 2, + 1 and – 2
(C) 0, + 1 and + 2
(D) – 2, + 1 and – 2

6. Which of the following is least reactive ?
(A) White phosphorus
(B) Yellow phosphorus
(C) Red phosphorus
(D) Black phosphorus

7. Which of the following oxides is amphoteric in nature ?
(A) N_2O_3 (B) P_4O_6
(C) Sb_4O_6 (D) Bi_2O_3

8. The thermal stability of the hydrides of group 15 follows the order :
(A) $NH_3 < PH_3 < AsH_3 < SbH_3 < BiH_3$
(B) $NH_3 > PH_3 > AsH_3 > SbH_3 > BiH_3$
(C) $PH_3 > NH_3 > AsH_3 > SbH_3 < BiH_3$
(D) $AsH_3 < PH_3 > SbH_3 > BiH_3 > NH_3$

9. The percentage of nitrogen in urea is about :
(A) 70 (B) 63 (C) 47 (D) 28

10. N_2O is formed :
(A) by heating NH_4NO_2
(B) by heating NH_4NO_3
(C) by heating $CsNO_3$
(D) by heating $Ca(NO_3)_2$

11. Which of the following acids can form two types of salts?
(A) Hyponitrous acid (B) Nitrous acid
(C) Nitric acid (D) Pernitric acid

12. Phosphide ion is isoelectronic with :
(A) Nitride ion (B) Fluoride ion
(C) Sodium ion (D) Chloride ion

13. Which of the following acids is monobasic?
(A) H_3PO_2 (B) H_3PO_4
(C) $H_4P_2O_7$ (D) $H_4P_2O_6$.

14. Which of the following statements is false for group 16^{th} elements ?
(A) Oxygen is a gas while other elements exist as solids.
(B) Sulphur exists as staggered 8-atom rings.
(C) Density in solid stable decreases from oxygen to tellurium.
(D) First ionisation energy of sulphur is higher than that of selenium.

15. A gas which is used as anaesthetic in dental surgery is :
(A) N_2 (B) CO
(C) N_2O (D) NH_3

16. Pearl white is :
(A) AsOCl (B) SbOCl
(C) BiOCl (D) $(NH_4)_2CO_3$

17. Dry bleaching is done by :
(A) Cl_2 (B) SO_2
(C) O_3 (D) None

18. Which of the following statement is false ?
(A) Superoxides give hydrogen peroxide and oxygen with water.
(B) CrO_3 is an acidic oxide.
(C) SnO_2 is an amphoteric oxide.
(D) KO_2 is peroxide which with H_2O forms hydrogen peroxide only.

19. H_2S is far more volatile than water because :
(A) sulphur atom is more electronegative than oxygen atom.
(B) oxygen being more electronegative than sulphur forms hydrogen bond.
(C) H_2O has bond angle of nearly 105°.
(D) hydrogen atom is loosely bonded with sulphur.

20. It is possible to obtain oxygen from air by fractional distillation because
(A) Oxygen is in a different group of the periodic table from nitrogen
(B) Oxygen is more reactive than nitrogen
(C) Oxygen has higher b.p. than nitrogen
(D) Oxygen has a lower density than nitrogen

21. The compound which on strong heating gives oxygen is :
(A) $AgNO_3$ (B) BaO_2
(C) $Pb(NO_3)_2$ (D) all of these

22. A considerable part of the harmful UV rays of the sun does not reach the surface of the earth. This is because high above the earth's atmosphere , there is a layer of :
(A) O_3 (B) CO_2
(C) SO_2 (D) NO

23. SO_2 can reduce :
(A) $HClO_3$ to HCl
(B) $Cr_2O_7^{2-}$ / H^+ to Cr^{3+}
(C) MnO_4^- / H^+ to Mn^{2+}
(D) all of these

24. Which of the following is oxidised by O_3 ?
(A) K_2MnO_4 (B) $Fe_2(SO_4)_3$
(C) $KMnO_4$ (D) $K_2Cr_2O_7$

25. Which of the following hydrogen halides is most volatile ?
(A) HCl (B) HF
(C) HI (D) HBr

26. Which is used in vulcanisation of rubber ?
(A) SF_6 (B) SF_4
(C) SF_2 (D) S_2Cl_2

27. Oxidising action increases in the following order :
(A) Cl < Br < I < F (B) Cl < I < Br < F
(C) I < F < Cl < Br (D) I < Br < Cl < F

28. Which of the following has highest bond strength :
(A) HI (B) HCl
(C) HF (D) HBr

29. The strongest reducing agent is :
(A) F^- (B) Cl^-
(C) Br^- (D) I^-

30. Fluorine is a stronger oxidising agent than chlorine in aqueous solution. This is attributed to many factors except :
(A) heat of dissociation
(B) electron affinity
(C) ionization potential
(D) heat of hydration

31. The halogens are :
(A) transition elements
(B) inner-transition elements
(C) noble elements
(D) representative elements

32. The correct chemical composition of bleaching powder is :
(A) $Ca(OCl)_2CaCl_2$
(B) $Ca(OCl)_2.CaCl_2.Ca(OH)_2.2H_2O$
(C) $Ca(OCl)_2.2H_2O$
(D) None

33. HCl gas is dried by passing through :
(A) Na_2SO_3
(B) Concentrated H_2SO_4
(C) Na_2CO_3
(D) Ammonia solution

34. Chlorine gas is dried over :
(A) CaO (B) NaOH
(C) H_2SO_4 (D) NH_3 (ℓ)

35. Bleaching powder is obtained by the interaction of chlorine and :
(A) dilute solution of $Ca(OH)_2$
(B) concentrated solution of $Ca(OH)_2$
(C) dry calcium oxide
(D) dry slaked lime

(SECTION-B)

36. ClO_2 is the anhydride of :
(A) HOCl (B) $HClO_2$
(C) $HClO_3$ (D) $HClO_2$ $HClO_3$

37. Of the following species, one which is non-existent :
(A) XeF_6 (B) XeF_5
(C) XeF_4 (D) XeF_2

38. XeF_6 on complete hydrolysis gives :
(A) Xe (B) XeO_2
(C) XeO_3 (D) XeO_4

39. Helium is added to oxygen used by deep sea divers because :
(A) It is less soluble in blood than nitrogen under high pressure
(B) It is lighter than nitrogen
(C) It is readily miscible with oxygen
(D) It is less poisonous than nitrogen

40. XeF_2 reacts with PF_5 to give :
(A) XeF_6 (B) $[XeF]^+ [PF_6]^-$
(C) XeF_4 (D) $[PF_4]^+ [XeF_3]^-$

41. Which of the following is not oxidised by MnO_2 ?
(A) F^- (B) Cl^- (C) Br^- (D) I^-

42. The isoelectronic pair is :
(A) Cl_2O, ICl_2^- (B) ICl_2^-, ClO_2
(C) IF_2^+, I_3^- (D) ClO_2^-, ClF_2^+

43. BrF_5 is a :
(A) Interhalogen compound
(B) Pseudohalogen compound
(C) Both the above
(D) None of the above

44. Hydrolysis of XX'_5 yields : (X′ is smaller halogen and X is bigger halogen) :
(A) HX′ and HOX (B) HX′ and HXO_3
(C) HX' and HXO_4 (D) HX and $HX'O_3$

45. The product of the reaction between one mole of XeO_3 and two mole of XeF_6 is :
(A) XeO_2F_2 (B) $XeOF_4$
(C) XeO_3F_2 (D) XeO_4

46. **Assertion :** HNO_3 is a stronger acid than HNO_2.
Reason : In HNO_3 there are two nitrogen-to-oxygen bonds whereas in HNO_2 there is only one.
(A) If both assertion and reason are true and the reason is the correct explanation of the assertion.
(B) If both assertion and reason are true but reason is not the correct explanation of the assertion.
(C) If assertion is true but reason is false.
(D) If assertion is false but reason is true.

47. **Assertion :** Chlorine and sulphur dioxide both are bleaching agents.
Reason : The bleaching action of chlorine and sulphur dioxide is performed through the process of oxidation.
(A) If both assertion and reason are true and the reason is the correct explanation of the assertion.
(B) If both assertion and reason are true but reason is not the correct explanation of the assertion.
(C) If assertion is true but reason is false.
(D) If assertion is false but reason is true.

48. **Assertion :** Halogens do not occur in free state.
Reason : Halogens are highly reactive.
(A) If both assertion and reason are true and the reason is the correct explanation of the assertion.
(B) If both assertion and reason are true but reason is not the correct explanation of the assertion.
(C) If assertion is true but reason is false.
(D) If assertion is false but reason is true.

49. **Assertion :** Liquid NH_3 is used for refrigeration.

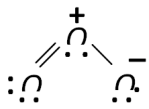
Reason : Liquid NH_3 quickly vaporises.

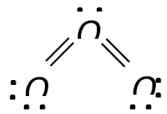
(A) If both assertion and reason are true and the reason is the correct explanation of the assertion.

(B) If both assertion and reason are true but reason is not the correct explanation of the assertion.

(C) If assertion is true but reason is false.

(D) If assertion is false but reason is true.

50. **Assertion :** The electronic structure of O_3 is 

Reason :  Structure is not allowed because octet around *O* cannot be expanded.

(A) If both assertion and reason are true and the reason is the correct explanation of the assertion.

(B) If both assertion and reason are true but reason is not the correct explanation of the assertion.

(C) If assertion is true but reason is false.

(D) If assertion is false but reason is true.