

### AIPMT 2006

1. Which of the following is **not** a correct statement?
- (1) Multiple bonds are always shorter than corresponding single bonds
  - (2) The electron-deficient molecules can act as Lewis acids
  - (3) The canonical structures have no real existence
  - (4) Every  $AB_5$  molecule does in fact have square pyramid structure.

### AIPMT 2007

2. Which one of the following anions is present in the chain structure of silicates :
- (1)  $SiO_4^{4-}$
  - (2)  $Si_2O_7^{6-}$
  - (3)  $(Si_2O_5^{2-})_n$
  - (4)  $(SiO_3^{2-})_n$

### AIPMT 2009

3. The straight chain polymer is formed by :-
- (1) Hydrolysis of  $(CH_3)_2SiCl_2$  followed by condensation polymerisation
  - (2) Hydrolysis of  $(CH_3)_3SiCl$  followed by condensation polymerisation
  - (3) Hydrolysis of  $CH_3SiCl_3$  followed by condensation polymerisation
  - (4) Hydrolysis of  $(CH_3)_4Si$  by addition polymerisation

### AIPMT Pre. 2010

4. Which one of the following molecular hydrides acts as a Lewis acid ?
- (1)  $CH_4$
  - (2)  $NH_3$
  - (3)  $H_2O$
  - (4)  $B_2H_6$
5. Oxidation states of P in  $H_4P_2O_5$ ,  $H_4P_2O_6$ ,  $H_4P_2O_7$ , are respectively :-
- (1) +3, +4, +5
  - (2) +3, +5, +4
  - (3) +5, +3, +4
  - (4) +5, +4, +3
6. How many bridging oxygen atoms are present in  $P_4O_{10}$  :-
- (1) 4
  - (2) 2
  - (3) 5
  - (4) 6

### AIPMT Pre. 2011

7. Name the type of the structure of silicate in which one oxygen atom of  $[SiO_4]^{4-}$  is shared ?
- (1) Linear chain silicate
  - (2) Sheet silicate
  - (3) Pyrosilicate
  - (4) Three dimensional

### AIPMT Mains 2010

8. Which of the following oxide is amphoteric :-
- (1)  $CO_2$
  - (2)  $SnO_2$
  - (3)  $CaO$
  - (4)  $SiO_2$

### AIPMT Pre. 2012

9. Which of the following statements is not valid for oxyacids of phosphorus?
- (1) All oxyacids contain tetrahedral four coordinated phosphorus
  - (2) All oxyacids contain atleast one  $P = O$  unit and one  $P - OH$  group
  - (3) Orthophosphoric acid is used in the manufacture of triple superphosphate
  - (4) Hypophosphorous acid is a diprotic acid
10. Sulphur trioxide can be obtained by which of the following reaction:
- (1)  $S + H_2SO_4 \xrightarrow{\Delta}$
  - (2)  $H_2SO_4 + PCl_5 \xrightarrow{\Delta}$
  - (3)  $CaSO_4 + C \xrightarrow{\Delta}$
  - (4)  $Fe_2(SO_4)_3 \xrightarrow{\Delta}$

### NEET-UG 2013

11. The basic structural unit of silicates is :-
- (1)  $SiO_4^{2-}$
  - (2)  $SiO^-$
  - (3)  $SiO_4^{4-}$
  - (4)  $SiO_3^{2-}$
12. Which of these is not a monomer for a high molecular mass silicone polymer ?
- (1)  $PhSiCl_3$
  - (2)  $MeSiCl_3$
  - (3)  $Me_2SiCl_2$
  - (4)  $Me_3SiCl$
13. Which of the following does not give oxygen on heating ?
- (1)  $(NH_4)_2Cr_2O_7$
  - (2)  $KClO_3$
  - (3)  $Zn(ClO_3)_2$
  - (4)  $K_2Cr_2O_7$

14. Roasting of sulphides gives the gas X as a by product. This is colourless gas with choking smell of burnt sulphur and causes great damage to respiratory organs as a result of acid rain. Its aqueous solution is acidic, acts as reducing agent and its acid has never been isolated. The gas X is :-  
 (1)  $\text{SO}_3$  (2)  $\text{H}_2\text{S}$  (3)  $\text{SO}_2$  (4)  $\text{CO}_2$

#### AIPMT 2015

15. Nitrogen dioxide and sulphur dioxide have some properties in common. Which property is shown by one of these compounds, but not by the other?  
 (1) is a reducing agent  
 (2) is soluble in water  
 (3) is used as a food-preservative  
 (4) forms 'acid-rain'

#### Re-AIPMT 2015

16. Strong reducing behaviour of  $\text{H}_3\text{PO}_2$  is due to :  
 (1) High oxidation state of phosphorus  
 (2) Presence of two  $-\text{OH}$  groups and one  $\text{P}-\text{H}$  bond  
 (3) Presence of one  $-\text{OH}$  group and two  $\text{P}-\text{H}$  bonds  
 (4) High electron gain enthalpy of phosphorus
17. Which of the statements given below is incorrect?  
 (1)  $\text{ONF}$  is isoelectronic with  $\text{O}_2\text{N}^-$   
 (2)  $\text{OF}_2$  is an oxide of fluorine  
 (3)  $\text{Cl}_2\text{O}_7$  is an anhydride of perchloric acid  
 (4)  $\text{O}_3$  molecule is bent
18. The stability of +1 oxidation state among Al, Ga, In and Tl increases in the sequence :  
 (1)  $\text{Tl} < \text{In} < \text{Ga} < \text{Al}$  (2)  $\text{In} < \text{Tl} < \text{Ga} < \text{Al}$   
 (3)  $\text{Ga} < \text{In} < \text{Al} < \text{Tl}$  (4)  $\text{Al} < \text{Ga} < \text{In} < \text{Tl}$

#### NEET-I 2016

19. Among the following, the correct order of acidity is  
 (1)  $\text{HClO}_3 < \text{HClO}_4 < \text{HClO}_2 < \text{HClO}$   
 (2)  $\text{HClO} < \text{HClO}_2 < \text{HClO}_3 < \text{HClO}_4$   
 (3)  $\text{HClO}_2 < \text{HClO} < \text{HClO}_3 < \text{HClO}_4$   
 (4)  $\text{HClO}_4 < \text{HClO}_2 < \text{HClO} < \text{HClO}_3$
20. When copper is heated with conc.  $\text{HNO}_3$  it produces  
 (1)  $\text{Cu}(\text{NO}_3)_2$  and  $\text{NO}_2$   
 (2)  $\text{Cu}(\text{NO}_3)_2$  and  $\text{NO}$   
 (3)  $\text{Cu}(\text{NO}_3)_2$ ,  $\text{NO}$  and  $\text{NO}_2$   
 (4)  $\text{Cu}(\text{NO}_3)_2$  and  $\text{N}_2\text{O}$

21. Which is the **correct** statement for the given acids?  
 (1) Phosphinic acid is a diprotic acid while phosphonic acid is a monoprotic acid  
 (2) Phosphinic acid is a monoprotic acid while phosphonic acid is a diprotic acid  
 (3) Both are triprotic acids  
 (4) Both are diprotic acids

#### NEET-II 2016

22. Boric acid is an acid because its molecule  
 (1) accepts  $\text{OH}^-$  from water releasing proton  
 (2) combines with proton from water molecule  
 (3) contains replaceable  $\text{H}^+$  ion  
 (4) gives up a proton
23.  $\text{AlF}_3$  is soluble in  $\text{HF}$  only in presence of  $\text{KF}$ . It is due to the formation of  
 (1)  $\text{AlH}_3$  (2)  $\text{K}[\text{AlF}_3\text{H}]$   
 (3)  $\text{K}_3[\text{AlF}_3\text{H}_3]$  (4)  $\text{K}_3[\text{AlF}_6]$

#### NEET(UG) 2017

24. In which pair of ions both the species contain  $\text{S}-\text{S}$  bond?  
 (1)  $\text{S}_4\text{O}_6^{2-}$ ,  $\text{S}_2\text{O}_3^{2-}$  (2)  $\text{S}_2\text{O}_7^{2-}$ ,  $\text{S}_2\text{O}_8^{2-}$   
 (3)  $\text{S}_4\text{O}_6^{2-}$ ,  $\text{S}_2\text{O}_7^{2-}$  (4)  $\text{S}_2\text{O}_7^{2-}$ ,  $\text{S}_2\text{O}_3^{2-}$
25. It is because of inability of  $ns^2$  electrons of the valence shell to participate in bonding that:-  
 (1)  $\text{Sn}^{2+}$  is oxidising while  $\text{Pb}^{4+}$  is reducing  
 (2)  $\text{Sn}^{2+}$  and  $\text{Pb}^{2+}$  are both oxidising and reducing  
 (3)  $\text{Sn}^{4+}$  is reducing while  $\text{Pb}^{4+}$  is oxidising  
 (4)  $\text{Sn}^{2+}$  is reducing while  $\text{Pb}^{4+}$  is oxidising

#### NEET(UG) 2018

26. Which of the following statements is **not** true for halogens ?  
 (1) All form monobasic oxyacids.  
 (2) All are oxidizing agents.  
 (3) All except fluorine show positive oxidation states.  
 (4) Chlorine has the highest electron - gain enthalpy.
27. The correct order of N-compounds in its decreasing order of oxidation states is -  
 (1)  $\text{HNO}_3$ ,  $\text{NO}$ ,  $\text{N}_2$ ,  $\text{NH}_4\text{Cl}$   
 (2)  $\text{HNO}_3$ ,  $\text{NO}$ ,  $\text{NH}_4\text{Cl}$ ,  $\text{N}_2$   
 (3)  $\text{HNO}_3$ ,  $\text{NH}_4\text{Cl}$ ,  $\text{NO}$ ,  $\text{N}_2$   
 (4)  $\text{NH}_4\text{Cl}$ ,  $\text{N}_2$ ,  $\text{NO}$ ,  $\text{HNO}_3$

### NEET(UG) 2019

28. Match the following :

- |                      |                                   |
|----------------------|-----------------------------------|
| (a) Pure nitrogen    | (i) Chlorine                      |
| (b) Haber process    | (ii) Sulphuric acid               |
| (c) Contact process  | (iii) Ammonia                     |
| (d) Deacon's process | (iv) Sodium azide or Barium azide |

Which of the following is the **correct** option ?

- |     | (a)   | (b)   | (c)   | (d)   |
|-----|-------|-------|-------|-------|
| (1) | (i)   | (ii)  | (iii) | (iv)  |
| (2) | (ii)  | (iv)  | (i)   | (iii) |
| (3) | (iii) | (iv)  | (ii)  | (i)   |
| (4) | (iv)  | (iii) | (ii)  | (i)   |

29. Which of the following is **incorrect** statement ?

- (1)  $\text{PbF}_4$  is covalent in nature
- (2)  $\text{SiCl}_4$  is easily hydrolysed
- (3)  $\text{GeX}_4$  ( $\text{X} = \text{F}, \text{Cl}, \text{Br}, \text{I}$ ) is more stable than  $\text{GeX}_2$
- (4)  $\text{SnF}_4$  is ionic in nature

### NEET(UG) 2019 (ODISHA)

30. The liquified gas that is used in dry cleaning along with a suitable detergent is :-

- (1) Water gas
- (2) Petroleum gas
- (3)  $\text{NO}_2$
- (4)  $\text{CO}_2$

31. Which of the following compounds is used in cosmetic surgery?

- (1) Silica
- (2) Silicates
- (3) Silicones
- (4) Zeolites

32. A compound 'X' upon reaction with  $\text{H}_2\text{O}$  produces a colorless gas 'Y' with rotten fish smell. Gas 'Y' is absorbed in a solution of  $\text{CuSO}_4$  to give  $\text{Cu}_3\text{P}_2$  as one of the products. Predict the compound 'X'

- |                             |                                  |
|-----------------------------|----------------------------------|
| (1) $\text{Ca}_3\text{P}_2$ | (2) $\text{NH}_4\text{Cl}$       |
| (3) $\text{As}_2\text{O}_3$ | (4) $\text{Ca}_3(\text{PO}_4)_2$ |

33. Which of the following oxoacids of phosphorus has strongest reducing property?

- |                                      |                             |
|--------------------------------------|-----------------------------|
| (1) $\text{H}_4\text{P}_2\text{O}_7$ | (2) $\text{H}_3\text{PO}_3$ |
| (3) $\text{H}_3\text{PO}_2$          | (4) $\text{H}_3\text{PO}_4$ |

34. Identify the correct formula of oleum from the following

- |                                      |                                      |
|--------------------------------------|--------------------------------------|
| (1) $\text{H}_2\text{S}_2\text{O}_7$ | (2) $\text{H}_2\text{SO}_3$          |
| (3) $\text{H}_2\text{SO}_4$          | (4) $\text{H}_2\text{S}_2\text{O}_8$ |

### NEET(UG) 2020

35. Which of the following oxoacid of sulphur has  $-\text{O}-\text{O}-$  linkage ?

- (1)  $\text{H}_2\text{S}_2\text{O}_7$ , pyrosulphuric acid
- (2)  $\text{H}_2\text{SO}_3$ , sulphurous acid
- (3)  $\text{H}_2\text{SO}_4$ , sulphuric acid
- (4)  $\text{H}_2\text{S}_2\text{O}_8$ , peroxodisulphuric acid

36. Identify the **correct** statements from the following:

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

37. Which of the following is **not** correct about carbon monoxide?

- (1) It is produced due to incomplete combustion
- (2) It forms carboxyhaemoglobin
- (3) It reduce oxygen carrying ability of blood
- (4) The carboxyhaemoglobin (haemoglobin bound to CO) is less stable than oxyhaemoglobin.

**NEET(UG) 2020(COVID-19)**

**38.** Which one of the following reactions does not come under hydrolysis type reaction ?

- (1)  $\text{SiCl}_{4(l)} + 2\text{H}_2\text{O}_{(l)} \rightarrow \text{SiO}_{2(s)} + 4\text{HCl}_{(aq)}$   
 (2)  $\text{Li}_3\text{N}_{(s)} + 3\text{H}_2\text{O}_{(l)} \rightarrow \text{NH}_{3(g)} + 3\text{LiOH}_{(aq)}$   
 (3)  $2\text{F}_{2(g)} + 2\text{H}_2\text{O}_{(l)} \rightarrow 4\text{HF}_{(aq)} + \text{O}_{2(g)}$   
 (4)  $\text{P}_4\text{O}_{10(s)} + 6\text{H}_2\text{O}_{(l)} \rightarrow 4\text{H}_3\text{PO}_{4(aq)}$

**NEET(UG) 2021**

**39.** Noble gases are named because of their inertness towards reactivity. Identify an **incorrect** statement about them.

- (1) Noble gases are sparingly soluble in water.  
 (2) Noble gases have very high melting and boiling points.  
 (3) Noble gases have weak dispersion forces.  
 (4) Noble gases have large positive values of electron gain enthalpy.

**40.** In which one of the following arrangements the given sequence is not strictly according to the properties indicated against it ?

- (1)  $\text{HF} < \text{HCl} < \text{HBr} < \text{HI}$  : Increasing acidic strength  
 (2)  $\text{H}_2\text{O} < \text{H}_2\text{S} < \text{H}_2\text{Se} < \text{H}_2\text{Te}$  : Increasing  $\text{pK}_a$  values  
 (3)  $\text{NH}_3 < \text{PH}_3 < \text{AsH}_3 < \text{SbH}_3$  : Increasing acidic character  
 (4)  $\text{CO}_2 < \text{SiO}_2 < \text{SnO}_2 < \text{PbP}_2$  : Increasing oxidizing power

<b>Que.</b>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
<b>Ans.</b>	4	4	1	4	1	4	3	2	4	4	3	4	1	3	3
<b>Que.</b>	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
<b>Ans.</b>	3	2	4	2	1	2	1	4	1	4	1	1	4	1	4
<b>Que.</b>	31	32	33	34	35	36	37	38	39	40					
<b>Ans.</b>	3	1	3	1	4	1	4	3	2	2					