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TARGET : NEET (UG) 2024

Course : SARANSH (Youtube Live CRASH COURSE)

I-CHEMISTRY

DPP

DAILY PRACTICE PROBLEMS

DPP NO. 1

Inorganic Chemistry : P-Block Elements(Nitrogen, Oxygen, Halogen, Inert gas family)

DPP No. : 1

1. Strong reducing behaviour of H_3PO_2 is due to :

(1) Presence of one –OH group and two P–H bonds

(2) High electron gain enthalpy of phosphourus

(3) High oxidation state of phosphorus

(4) Presence of two –OH groups and one P–H bond.

2. The product obtained as a result of a reaction of nitrogen with CaC_2 is :

(1) Ca_2CN (2) $Ca(CN)_2$ (3) $CaCN_2$+ C (4) $CaCN_3$

3. Name the gas that can readily decolourise acidified $KMnO_4$ solution:

(1) CO_2 (2) SO_2 (3) NO_2 (4) P_2O_5

4. Identify the correct formula of 'oleum' from the following

(1) $H_2S_2O_7$ (2) H_2SO_3 (3) H_2SO_4 (4) $H_2S_2O_8$

5. Which of the following oxoacid of sulphur has –O–O– linkage ?

(1) H_2SO_4, sulphuric acid (2) $H_2S_2O_8$, peroxodisulphuric acid

(3) $H_2S_2O_7$, pyrosulphuric acid (4) H_2SO_3, sulphurous acid

6. On electrolysis of dil.sulphuric acid using Platinum (Pt) electrode, the product obtained at anode will be:

(1) Oxygen gas (2) H_2S gas (3) SO_2 gas (4) Hydrogen gas

7. Which of the following statement is NOT true about acid rain ?

(1) It is due to reaction of SO_2, NO_2 and CO_2 with rain water

(2) Causes no damage to monuments like Taj Mahal

(3) It is harmful for plants

(4) Its pH is less than 5.6

8. Given below are two statements:

Statement I: The boiling points of the following hydrides of group 16 elements increases in the order - $H_2O < H_2S < H_2Se < H_2Te$.

Statement II:

The boiling points of these hydrides increase with increase in molar mass.

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

(1) Statement I is correct but Statement ll is incorrect.

(2) Statement I is incorrect but Statement II is correct.

(3) Both Statement I and Statement II are correct.

(4) Both Statement I and Statement II are incorrect.

9. What is the **correct** order for boiling points of the following compounds ?

(1) $BiH_3 > SbH_3 > NH_3 > AsH_3 > PH_3$ (2) $NH_3 > PH_3 > AsH_3 > SbH_3 > BiH_3$

(3) $PH_3 > NH_3 > AsH_3 > SbH_3 > BiH_3$ (4) $AsH_3 > PH_3 > NH_3 > SbH_3 > BiH_3$

10. Which of the following reactions is a part of the large scale industrial preparation of nitric acid?

(1) $NaNO_3 + H_2SO_4 \xrightarrow[500K,9bar]{Pt} NaHSO_4 + HNO_3$

(2) $4\ NH_3 + 5\ O_2\ (\text{from air}) \xrightarrow[500K,9bar]{Pt} 4\ NO + 6\ H_2O$

(3) $4\ HPO_3 + 2\ N_2O_5 \xrightarrow[500K,9bar]{Pt} 4\ HNO_3 + P_4O_{10}$

(4) $Cu(NO_3)_2 + 2\ NO_2 + 2H_2O \xrightarrow[500K,9bar]{Pt} 4\ HNO_3 + Cu$

11. Which of the statements given below is incorrect ?

(1) Cl_2O_7 is an anhydride of perchloric acid (2) O_3 molecule is bent

(3) ONF is isoelectronic with O_2N^- (4) OF_2 is an oxide of fluorine

12. Match the interhalogen compounds of Column I with the geometry in column II and Assign the correct code.

	Column I		**Column II**
(a)	XX'	(i)	T-shape
(b)	XX_3'	(ii)	Pentagonal bipyramidal
(c)	XX_5'	(iii)	Linear
(d)	XX_7'	(iv)	Square-pyramidal
		(v)	Tetrahedral

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

13. **Statement I :** Acid strength increases in the order given as HF << HCl << HBr << HI.

Statement II : As the size of the elements F, Cl, Br, I increases down the group, the bond strength of HF, HCl, HBr and HI decreases and so the acid strength increases.

In the light of the above statements, choose the **correct** answer from the options given below.

(1) Both **Statement I** and **Statement II** are false.

(2) **Statement I** is correct but **Statement II** are false.

(3) **Statement I** is incorrect but **Statement II** is true.

(4) Both **Statement I** and **Statement II** are true.

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

(1) Noble gases have very high melting and boiling points

(2) Noble gases have weak dispersion forces.

(3) Noble gases have large positive values of electron gain enthalpy.

(4) Noble gases are sparingly soluble in water.

15. Given below are two statements:

Statement I: The boiling points of aldehydes and ketones are higher than hydrocarbons of comparable molecular masses because of weak molecular association in aldehydes and ketones due to dipole – dipole interactions.

Statement II: The boiling points of aldehydes and ketones are lower than the alcohols of similar molecular masses due to the absence of H-bonding.

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

(1) **Statement I** is correct but **Statement II** is incorrect

(2) **Statement I** is incorrect but **Statement II** is correct

(3) Both **Statement I** and **Statement II** are correct

(4) Both **Statement I** and **Statement II** are incorrect

16. The element used for welding metals with high melting points is :

(1) Cl (2) H_2 (3) Ne (4) He

Answer Key

1.	(1)	**2.**	(3)	**3.**	(2)	**4.**	(1)	**5.**	(2)	**6.**	(1)	**7.**	(2)
8.	(4)	**9.**	(1)	**10.**	(2)	**11.**	(4)	**12.**	(2)	**13.**	(4)	**14.**	(1)
15.	(3)	**16.**	(2)										