PHYSICAL / INORGANIC CHEMISTRY

DPP
DAILY PRACTICE PROBLEMS

DPP No. 65

Total Marks : 50

Max. Time : 52 min.

Topic : p-block (Boron and Carbon family)

Type of Questions		M.M., Min.
Single choice Objective ('–1' negative marking) Q.1 to Q.10	(3 marks 3 min.)	[30, 30]
Comprehension ('–1' negative marking) Q.11 to Q. 14	(3 marks 3 min.)	[12, 12]
Match the Following (no negative marking) Q. 15	(8 marks 10 min.)	[8, 10]

1. **(a)** Pyrosilicate ion is :

(A) SiO_4^{4-} (B) SiO_4^{2-} (C) $Si_2O_6^{4-}$ (D) $Si_2O_7^{6-}$

(b) In group IVA or 14 of the extended from of the periodic table with increases in atomic number, the oxidising power of tetravalent species increases in the order :

(A) Ge > Pb > Sn (B) Ge > Sn > Pb (C) Pb > Ge > Sn (D) Pb > Sn > Ge

2. CO forms a volatile compound with :

(A) nickel (B) copper (C) sodium (D) aluminium

3. H_2SO_4 is not used for the prepartion of CO_2 from marble chips because :

(A) It does not react

(B) huge amount of heat is evolved

(C) the reaction is vigorus

(D) calcium sulphate is sparingly soluble and get deposited on marble chips and stops the reaction

4. $(Me)_2SiCl_2$ gives on hydrolysis :

(A) $(Me)_2Si(OH)_2$ (B) $(Me)_2Si = O$

(C) $-[—O—(Me)_2Si—O—]_n—$ (D) $Me_2SiCl(OH)$

5. Corondum is :

(A) SiC (B) $SiCl_4$ (C) Al_2O_3 (D) CCl_4

6. Which is formed when $SiCl_4$ vapours are passed over hot Mg ?

(A) Si (B) $MgCl_2$ (C) Mg_2Si (D) $MgSiCl_6$

7. The carbide which gives propyne on hydrolysis :

(A) Al_4C_3 (B) CaC_2 (C) Fe_3C (D) Mg_2C_3

8. Which among the following carbide is methanide ?

(A) Al_4C_3 (B) CaC_2 (C) Be_2C (D) SiC

9. $[CF_6]^{2-}$ is not possible but $[SiF_6]^{2-}$ is possible due to :

(A) large difference inthe electronegativity of carbon and silicon

(B) large difference in size of carbon and silicon atoms

(C) the inbility of carbon to exapand its octet

(D) The inability of silicon to form double bonds

10. The formula of white lead is :

(A) $Pb(OH)_2.PbCO_3$ (B) $2PbCO_3.Pb(OH)_2$

(C) $Pb(OH)_2.Pb(CH_3COO)_2$ (D) $PbCO_3.PbO$

Comprehension # (11 to 14)

Pb insolbule in H_2O due to passive layer of oxide but soluble in excess of oxygen is called plumbosolvency.

Plumbosolvency can be increase by NO_3^-, HCO_3^-, ions & decreases by PO_4^{2-}, Cl^- ions.

11. Which of the following metal does not react with H_2O :

(A) Lead (B) Boron (C) Sodium (D) Tin

12. Plumbosolvency can be increase by :

(A) SO_4^{2-} (B) PO_4^{3-} (C) Cl^- (D) CH_3COO^-

13. Pb insoluble in water because :

(A) it is hard metal

(B) it has less SRP

(C) due to passive layer of oxide

(D) none

14. Which of the following statement is not correct ?

(A) Lead salts are slow poisons

(B) Lead metal is used in accumulators

(C) Plumbosolvency increases by the presence of carbonates, sulphates, phosphates, etc.

(D) Lead is a soft metal

15. Match the following :

Column-I	**Column-II**
(A) Si	(p) Forms Na_2MO_2 with NaOH
(B) Ge	(q) Forms mono & dioxide both
(C) Sn	(r) solid at room temperature
(D) Pb	(s) Shows +2, +4 oxidation state
	(t) shows –4 oxidation state

Answer Key

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1.	**(a)** (D)	**(b)**	(D)	**2.**	(A)	**3.**	(D)	**4.**	(C)
5.	(C)	**6.**	(C)	**7.**	(D)	**8.**	(A)	**9.**	(C)
10.	(B)	**11.**	(A)	**12.**	(D)	**13.**	(C)	**14.**	(C)

15. (A– r, t); (B – p, q, r, s, t) ; (C – p, q, s, r) ; (D – p, q, s, r)

Hints & Solutions

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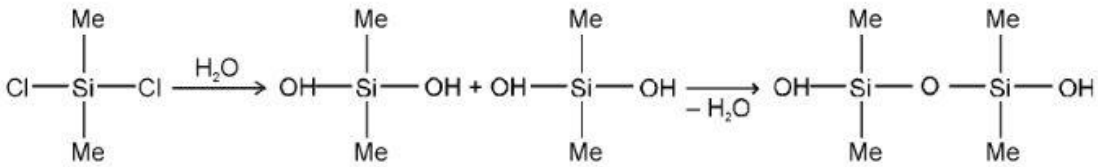
4.



In this manner several molecules may combine to form a long chain polymer whose both the ends will be occupied by –OH groups. Such compounds are generally represented from the following formula.