

SRIGAYATRI EDUCATIONAL INSTITUTIONS

INDIA

P-Block elements [14th Group]

- The most abundant IVA group elements in the earth's crust is**
1) Ge 2) C 3) Si 4) Sn
- The following bond has highest energy**
1) Si – Si 2) C – C 3) Sn – Sn 4) Pb – Pb
- Which of the IV group element do not exhibit allotropy**
1) Si 2) Pb 3) C 4) Sn
- Which is not an allotrope of carbon ?**
1) Graphit 2) Diamond 3) Carborandum 4) Coke
- Carbon reacts with Conc. H_2SO_4 to give**
1) CO_2, SO_2, H_2O 2) SO_2, H_2O, CO 3) CO_2, SO_3, H_2O 4) $H_2, O_2, steam$
- Some statements are given regarding IVA group elements**
a) Order of electron negativity : $C > Si = Ge = Sn = Pb$
b) Order of Ionisation potential $C > Si > Ge > Pb > Sn$
c) Order of Melting point $C > Si > Ge > Pb > Sn$
Correct order is
1) b, c only 2) a, b only 3) a, b, c 4) a only
- Graphite is not**
1) a good conductor of heat 2) an amorphous allotrope of carbon
3) softer than diamond 4) used for making lubriants
- Hybridisation of carbon in Diamond is**
1) sp 2) sp^2 3) sp^3 4) sp^3d
- $C \xrightarrow[\Delta]{NaOH} \rightarrow$
1) $HCOONa, H_2$ 2) CO, H_2, Na_2O 3) CO_2, Na_2O, H_2O 4) Na_2CO_3, Na, H_2
- Silica contains**
1) SiO_4^{2-} 2) SiO_4^{3-} 3) SiO_4^{4-} 4) SiO_4 tetrahedral units
- The basic unit present in pyrosilicates is**

- 1) $(Si_2O_5)^{2-}$ 2) $(SiO_3)^{4-}$ 3) $Si_2O_7^{6-}$ 4) SiO_2

12. $SiCl_4 + 4H_2O \rightarrow X + 4HCl$. "X" on heating upto $1000^\circ C$ "Y" is obtained "Y" on treating with HF the final product obtained is

- 1) H_2SiO_3 2) H_2SiO_4 3) SiF_4 4) H_2SiF_6

13. Which of the following is a chain silicate

- 1) Zircon 2) Spodumene 3) Termolite 4) Kolin

14. An acidic flux among the following is

- 1) CaO 2) MgO 3) SiO_2 4) CaH_2

15. Pb and Sn are extracted from their chief ores by

- 1) Carbon reduction and self reduction 2) Self reduction and carbon reduction
3) electrolysis and self reduction 4) Self reduction and electrolysis

16. Buckminster fullerene is ..

- 1) Graphite 2) Diamond 3) C- 60 4) bone charcal

17. The hybrid state of carbon atoms in C_{60} molecule is

- 1) sp 2) sp^2 3) sp^3 4) dsp^2

18. When some of Si^{+4} in frame work silicate ate replaced by Al^{+3} and additional metal ion it results in the formation of

- 1) Zeolites 2) Silicones 3) Disilicates 4) Glass

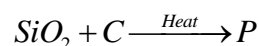
19. Among the following substituted silanes the one which will give rise to cross linked silicone polymer on hydrolysis is

- 1) R_4Si 2) $RSiCl_3$ 3) R_2SiCl_2 4) R_3SiCl

20. The stability of dihalides of Si, Ge, Sn and Pb increases steadily in the sequence:

- 1) $PbX_2 < SnX_2 < GeX_2 < SiX_2$ 2) $GeX_2 < SiX_2 < SnX_2 < PbX_2$
3) $SiX_2 < GeX_2 < PbX_2 < SnX_2$ 4) $SiX_2 < GeX_2 < SnX_2 < PbX_2$

21. The products of the following reaction are



- 1) SiC and CO_2 2) SiO and CO 3) SiC and CO 4) Si and CO

22. Lead oxide (PbO) can be dissolved in :

- 1) HNO_3 2) HCl 3) H_2SO_4 4) H_2O

23. A: Graphite is a good conductor of heat and electricity

R: Free electrons are spread out in the structure of graphite

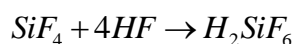
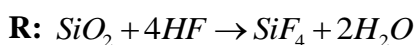
- 1) Both (A) and (R) are true and (R) is the correct explanation of (A)
- 2) Both (A) and (R) are true and (R) is not the correct explanation of (A)
- 3) Both (A) and (R) are true
- 4) Both (A) and (R) are false

24. A: CO₂ is linear

R: It is not in sp hybridised state

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25. A: Silica is soluble in HF



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26. A: pb⁺⁴ compounds are stronger oxidising agents than Sn⁺⁴ compound

R: The higher oxidation states for the group 14 are more stable for the heavier members of the group due to inert pair effect

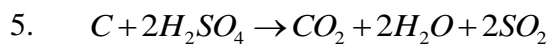
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KEY

1.3	2.2	3.2	4.3	5.1	6.3	7.2	8.3	9.4	10.4
11.3	12.4	13.2	14.3	15.2	16.3	17.2	18.1	19.	20.4
21.3	22.1	23.1	24.4	25.1	26.4				

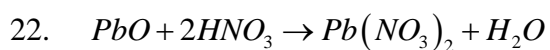
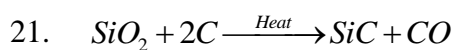
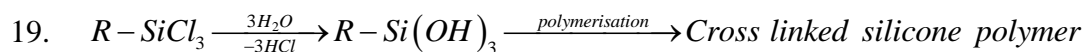
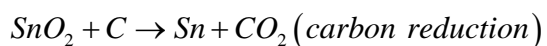
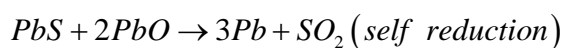
Solutions

4. Cabornadum is “SiC”



7. Graphite is crystalline allotrope of carbon

15.



PbO dissolves in HNO₃ as it forms lead nitrate which is soluble