

## Chemistry Worksheets Class 11 on Chapter 11 The p-Block Elements- Set 4

**Q-1:** Which of the following is not a silicone's property?

- a) Water repellents
- b) Effective electrical conductors
- c) Stable towards heat
- d) Non-toxic and chemically resistant

**Q-2:** Which of the following is a correct match?

- a)  $C_{60}$  - Buckminsterfullerene
- b)  $Na_2B_4O_7 \cdot 4H_2O$  - Kemitite
- c) Yellow bead -  $Ti(BO_2)_2$
- d) All of the above

**Q-3:** Which of the following is the correct term used for the hydrides of boron?

- a) Borazole
- b) Borazine
- c) Boranes
- d) Borax

**Q-4:** White fumes appear around the bottle of anhydrous  $AlCl_3$  due to

- a)  $AlCl_3$  decomposition
- b)  $AlCl_3$  hydrolysis that releases  $H_2$  gas.
- c)  $AlCl_3$  hydrolysis that releases  $Cl_2$  gas
- d)  $AlCl_3$  hydrolysis that releases gaseous HCl

**Q-5:** The percentage of lead in a lead pencil is

- a) Zero
- b) 20
- c) 30
- d) 50

**Q-6:** How photosynthesis helps in the reduction of  $CO_2$  from the atmosphere?

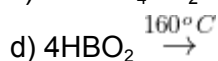
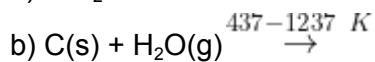
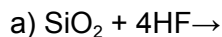
**Q-7:** Give one method of preparation of  $Na_2B_4O_7$ .

**Q-8:**

- a) Give the chemical composition of the glassy bead.
- b) Give the colour of the bead produced when glassy beads react with  $CuO$ .

**Q-9:** Why do the carbon family members, other than carbon, not create  $p\pi-p\pi$  bonds?

**Q-10:** Complete the following reactions.



**Q-11:** Give reasons for the following.

- The first ionisation energy increases from Sn to Pb.
- Diamond is a bad conductor of heat and electricity.
- Basicity of orthoboric acid is one.

**Q-12:** Why does carbon show anomalous behaviour with the rest of the members of the family?

**Q-13:** What might be expected of the oxidising power of the elements when we transition through the period in the p-block?

**Q-14:** Are Al's oxidation state and covalency in  $[\text{AlCl}(\text{H}_2\text{O})_5]^{2+}$  the same?

**Q-15:** Predict the chemical formulae of the compounds that could be created by the following pairs of elements using the periodic table:

- Silicon and bromine
- Sulphur and aluminium

**Q-16:** Why does boron not form  $\text{B}^{3+}$  ions?

**Q-17:** Diamond is covalent yet has a high melting point. Why?

**Q-18:**

- Give the structure of orthoboric acid and give its few physical properties.
- Give the reaction of orthoboric acid with water.

**Q-19:** The first ionisation enthalpy ( $\Delta_i H$ ) values of the third-period elements Na, Mg and Si are respectively 496, 737 and 786 kJ/mol. Predict whether the first  $\Delta_i H$  value for Al will be closer to 575 or 760 kJ/mol. Justify your answer.

**Q-20:** When calcium is burned with nitrogen, it creates a white powder that, when combined with enough water, dissolves to create a gas called X and an alkaline solution. A thin layer of solid (Y) is formed on the solution's surface after exposure to air. Determine the substances (X) and (Y).