

6. Periodic Table

- Which of the following statements concerning oxygen and sulphur is correct?
 - They have the same number of occupied electron shells in their atoms.
 - They exist in the same state at room temperature and pressure.
 - Oxygen has a higher boiling point than sulphur.
 - The atomic size of sulphur is greater than that of oxygen.

- Which of the following statements concerning the periodic table is / are correct?
 - Chromium is an example of transition metals.
 - Across a period, from left to right, the melting point of elements increases.
 - The lower the element located in each group, the more reactive the element is.
 - (1) only
 - (2) only
 - (1) and (3) only
 - (2) and (3) only

- Which of the following statements concerning elements in the same group of the periodic table is / are correct?
 - They have the same number of outermost shell electrons in their atoms.
 - They have the same chemical properties.
 - They exist in the same physical state at room temperature and pressure.
 - (1) only
 - (2) only
 - (1) and (3) only
 - (2) and (3) only

- Which of the following statements concerning chlorine, bromine and iodine are correct?
 - They are all poisonous.
 - Their boiling points decrease down the group.
 - Their atomic sizes increase down the group.
 - (1) and (2) only
 - (1) and (3) only
 - (2) and (3) only
 - (1), (2) and (3)

- Which of the following statements concerning Group 0 elements are correct?
 - They are all colourless gases at room temperature and pressure.
 - They have 8 outermost shell electrons in their atoms.
 - Their atomic sizes increase down the group.
 - (1) and (2) only
 - (1) and (3) only
 - (2) and (3) only
 - (1), (2) and (3)

6. The atomic number of element X is 19. Which of the following statements concerning X are correct?
- (1) X tarnishes when exposed to the air.
 - (2) X reacts vigorously with water.
 - (3) X is a Period 3 element.
- A (1) and (2) only
B (1) and (3) only
C (2) and (3) only
D (1), (2) and (3)
7. Which of the following statements about calcium, strontium and barium are correct?
- (1) Their reactivity increases with relative atomic mass.
 - (2) They react with cold water liberating hydrogen.
 - (3) Aqueous solutions of their hydroxides are alkaline.
- A (1) and (2) only
B (1) and (3) only
C (2) and (3) only
D (1), (2) and (3)
8. Which of the following statements concerning boiling points are correct?
- (1) Water boils at a higher temperature than carbon dioxide.
 - (2) Argon boils at a higher temperature than helium.
 - (3) Potassium boils at a higher temperature than sodium.
- A (1) and (2) only
B (1) and (3) only
C (2) and (3) only
D (1), (2) and (3)
9. A solid element X has a melting point below 100 °C. It is stored in paraffin oil in the laboratory. X is likely to be a
- A Group I element.
B Group II element.
C Group III element.
D Group IV element.
10. Rubidium is below potassium in the periodic table. Which of the following statements concerning rubidium is correct?
- A Rubidium reacts with water vigorously.
B The atomic size of rubidium is smaller than that of potassium.
C All compounds of rubidium are coloured.
D Rubidium is less reactive than potassium.
11. Barium (Ba) belongs to Group II of the periodic table. Which of the following methods is the most suitable for the extraction of barium?
- A Electrolyzing an aqueous solution of barium chloride
B Electrolyzing molten barium chloride
C Reducing barium oxide with carbon
D Roasting barium sulphide in air

12. Strontium is below calcium in Group II of the periodic table. Which of the following statements concerning strontium is INCORRECT?
- A It is in Period 5 of the periodic table.
 - B It tarnishes quickly when exposed to the air.
 - C It can be obtained from its ore by reduction with carbon.
 - D Its atomic size is larger than that of calcium.
13. Caesium is a Group I element. Which of the following statements concerning caesium are correct?
- (1) It reacts explosively with water.
 - (2) It gives a characteristic flame colour in flame test.
 - (3) It is a soft metal.
- A (1) and (2) only
 - B (1) and (3) only
 - C (2) and (3) only
 - D (1), (2) and (3)
14. Strontium is below calcium in Group II of the periodic table. Which of the following statements concerning strontium are correct?
- (1) It is more reactive than calcium.
 - (2) It gives a characteristic flame colour in flame test.
 - (3) It can be obtained by the electrolysis of molten strontium chloride.
- A (1) and (2) only
 - B (1) and (3) only
 - C (2) and (3) only
 - D (1), (2) and (3)
15. The element astatine is below iodine in Group VII of the periodic table. Which of the following statements concerning astatine is / are correct?
- (1) It is a coloured solid at room conditions.
 - (2) It is more reactive than chlorine.
 - (3) It is a Period 5 element.
- A (1) only
 - B (2) only
 - C (1) and (3) only
 - D (2) and (3) only
16. The element krypton (Kr) is below argon in Group 0 of the periodic table. Which of the following statements concerning krypton are correct?
- (1) Its atom has an octet structure in the outermost shell.
 - (2) It is in Period 4 of the periodic table.
 - (3) Its density is higher than that of argon.
- A (1) and (2) only
 - B (1) and (3) only
 - C (2) and (3) only
 - D (1), (2) and (3)

