

Unit 1: Atomic structure

Subunit 1.3: Electrons, energy levels and atomic orbitals

Topical Question No: 1

1 Which ion has the same electronic configuration as Cl^- ?

- A** F^- **B** P^+ **C** Sc^{3+} **D** Si^{4+}

Topical Question No: 2

2 The electronic configuration of the two outermost shells of an atom is $3s^2 3p^6 3d^5 4s^2$.

What is this atom?

- A** manganese
B phosphorus
C strontium
D vanadium

Topical Question No: 3

3 Which statement about a 3p orbital is correct?

- A** It can hold a maximum of 6 electrons.
B It has the highest energy of the orbitals with principal quantum number 3.
C It is at a higher energy level than a 3s orbital but has the same shape.
D It is occupied by one electron in an isolated phosphorus atom.

Topical Question No: 4

32 In which pairs do both species have the same number of unpaired electrons in p orbitals?

- 1 O and Cl^+
2 F^+ and Ga^-
3 N and Kr^{3+}

Topical Question No: 5

32 Use of the Data Booklet is relevant to this question.

In which pairs do both species have the same number of unpaired p electrons?

- 1 O and Cl^+
2 F^+ and Ga^-
3 P and Ne^+

Topical Question No: 6

31 *Use of the Data Booklet is relevant to this question.*

In which pairs do both species have the same number of unpaired p electrons?

- 1** Al^{2-} and O^+
- 2** N and Cl^{2+}
- 3** C and Cl^+

Answer Key

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2. Error
3. Error
4. Error
5. Error
6. Error