

SUCCESS KEY TEST SERIES

WORKSHEET

Std: 11th Science

Subject: Chemistry

Time: 1Hrs

Date :

4. Structure of Atom

Max Marks: 35

Q.1 Select and write the most appropriate answers from given alternatives: **5**

- The energy difference between the shells goes on when moved away from the nucleus.
(a) Increasing (b) decreasing (c) equalizing (d) static
- If the uncertainties in the position and velocity of a particle are 10^{-10} m and 5.27×10^{-24} ms⁻¹ respectively. Then the mass of the particle would be
(a) 1 g (b) 10 g (c) 100 g (d) 1000 g
- On increasing principle quantum, the distance of electron from nucleus
(a) increases. (b) decreases. (c) remains same. (d) First increase then decreases
- The value of Ψ^2 at nodel place is
(a) 100 (b) 10
(c) 50 (d) 0
- Neutron was discovered by
(a) J.J.Thomsan (b) E.Goldstein (c) Chadwick (d) Pauli

Q.2 Answer the following very short questions: **5**

- What is isotones?
- Write the number of protons and neutrons in C-13 isotope.
- How many nodes are present in 2s orbitals?
- How 4d, 5d and 6d orbitals are different from 3d orbitals?
- Write the electronic configuration of a divalent ion of copper.

Q.3 Answer the following Questions: **10**

- The electronic configuration of oxygen is written as

$1s^2 2s^2 2p_x^2 2p_y^1 2p_z^1$ and not $1s^2 2s^2 2p_x^2 2p_y^2 2p_z^0$ Explain

- State the order of filling atomic orbitals following Aufbau principle.
- Match the following:

	Element		Number of neutrons
(a)	$^{40}_{18}\text{Ar}$	(i)	7
(b)	$^{13}_6\text{C}$	(ii)	21
(c)	$^{40}_{19}\text{K}$	(iii)	8
(d)	$^{14}_7\text{N}$	(iv)	22

- Make the pairs:

	Column A		Column B
(a)	Neutrons	(i)	six electrons
(b)	p-orbital	(ii)	$-1.6 \times 10^{19}\text{C}$
(c)	Charge on electron	(iii)	Ultraviolet region
(d)	Lyman series	(iv)	Chadwick

5) Write note on Principal Quantum number.

Q.4 Answer the following Questions:

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- 1) Differentiate between Isotopes and Isobars.
- 2) Define the terms:
(i) Isotones (ii) Isoelectronic species (iii) Electronic configuration
- 3) State and explain Pauli's exclusion principle.
- 4) Write condensed orbital notation of electronic configuration of the following elements:
(a) Lithium ($Z = 3$) (b) Carbon ($Z = 6$)
(c) Oxygen ($Z = 8$) (d) Silicon ($Z = 14$)
(e) Chlorine ($Z = 17$) (f) Calcium ($Z = 20$)
- 5) Write electronic configurations of Fe, Fe^{2+} , Fe^{3+}

----- All the Best -----