

JEE MAIN STRUCTURE OF ATOM — ELECTRONIC CONFIGURATION OF ATOMS AND IONS — PYQS

Max. Marks: 20
Questions: 5

Section A (MCQ) — 3 questions

- Q.1** The extra stability of half-filled subshell is due to :
- Symmetrical distribution of electrons
 - Smaller coulombic repulsion energy
 - The presence of electrons with the same spin in non-degenerate orbitals
 - Larger exchange energy
 - Relatively smaller shielding of electrons by one another

Identify the correct statements :

[JEE Main 2025 (Online) 7th April Evening Shift]

- (1) B, D and E only (2) A, B, D and E only
(3) B, C and D only (4) A, B and D only

 Scan or tap for the
full solution


- Q.2** Consider the ground state of chromium atom ($Z = 24$). How many electrons are with Azimuthal quantum number $l = 1$ and $l = 2$ respectively ?

[JEE Main 2025 (Online) 4th April Evening Shift]

- (1) 16 and 5 (2) 12 and 5
(3) 12 and 4 (4) 16 and 4

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- Q.3** Match List I with List II

LIST I (Element)		LIST II (Electronic Configuration)	
A.	N	I.	$[\text{Ar}]3d^{10}4s^24p^5$
B.	S	II.	$[\text{Ne}]3s^23p^4$
C.	Br	III.	$[\text{He}]2s^22p^3$
D.	Kr	IV.	$[\text{Ar}]3d^{10}4s^24p^6$

Choose the correct answer from the options given below: [JEE Main 2024 (Online) 9th April Evening Shift]

- (1) A-IV, B-III, C-II, D-I
(2) A-I, B-IV, C-III, D-II
(3) A-III, B-II, C-I, D-IV
(4) A-II, B-I, C-IV, D-III

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Section B (Numerical) — 2 questions

- Q.4** Niobium (Nb) and ruthenium (Ru) have “x” and “y” number of electrons in their respective 4 d orbitals. The value of $x + y$ is _____.

[JEE Main 2025 (Online) 22nd January Evening Shift]

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- Q.5** Total number of ions from the following with noble gas configuration is _____.
 Sr^{2+} ($z = 38$), Cs^+ ($z = 55$), La^{2+} ($z = 57$), Pb^{2+} ($z = 82$), Yb^{2+} ($z = 70$) and Fe^{2+} ($z = 26$)

[JEE Main 2024 (Online) 27th January Evening Shift]

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ANSWER KEY

Section A (MCQ) — 3 questions

Ques.	1	2	3									
Ans.	2	2	3									

Section B (Numerical) — 2 questions

Ques.	4	5										
Ans.	11	2										