Quantum Number - Part I

Course on Inorganic Chemistry for Class XI - 2023

Vishal joshi • Lesson 1 • May 27, 2021

Q.N

S - Block

S - Block -

S.3 o — f. 30

Q.N

7 pm — 8 pm 1hr

1 June

Q.N

Basic

2 June — Periodic properties

Q.N :- Quantum number give complete information about an electron of an orbital in an atom

type of Q.N

(1) principale Q.N (n)

(2) Azimuthal Q.N (l)

(3) Magnetic Q.N (m) (m_l)

(4) spin Q.N (s) (m_s)

(1) Principal Q.N (n)

(i) Niels bohr

(ii) it represents shell | energy level | orbit

(iii) value = 1 to ∞

n =	1	2	3	4	5	6
=	K	L	M	N	O	P

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IIT INORGANIC CHEMISTRY

VISHAL JOSHI SIR

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Kota (Raj.) 324005

Mr. Vishal Joshi who is the **Director & Co-Founder of Nucleus Education** popularly known as VJ sir among students. He is also the HOD of Inorganic Chemistry Department. He is Known as the Wizard of Inorganic Chemistry. Nucleus Education is A Premier Institute for IIT JEE(Main+ Advanced), NEET (UG) and other Competitive Examinations of National and International level like Olympiads, PRMO, RMO, IJSO, ICHO, IPHO, IAO, NTSE and KVPY.

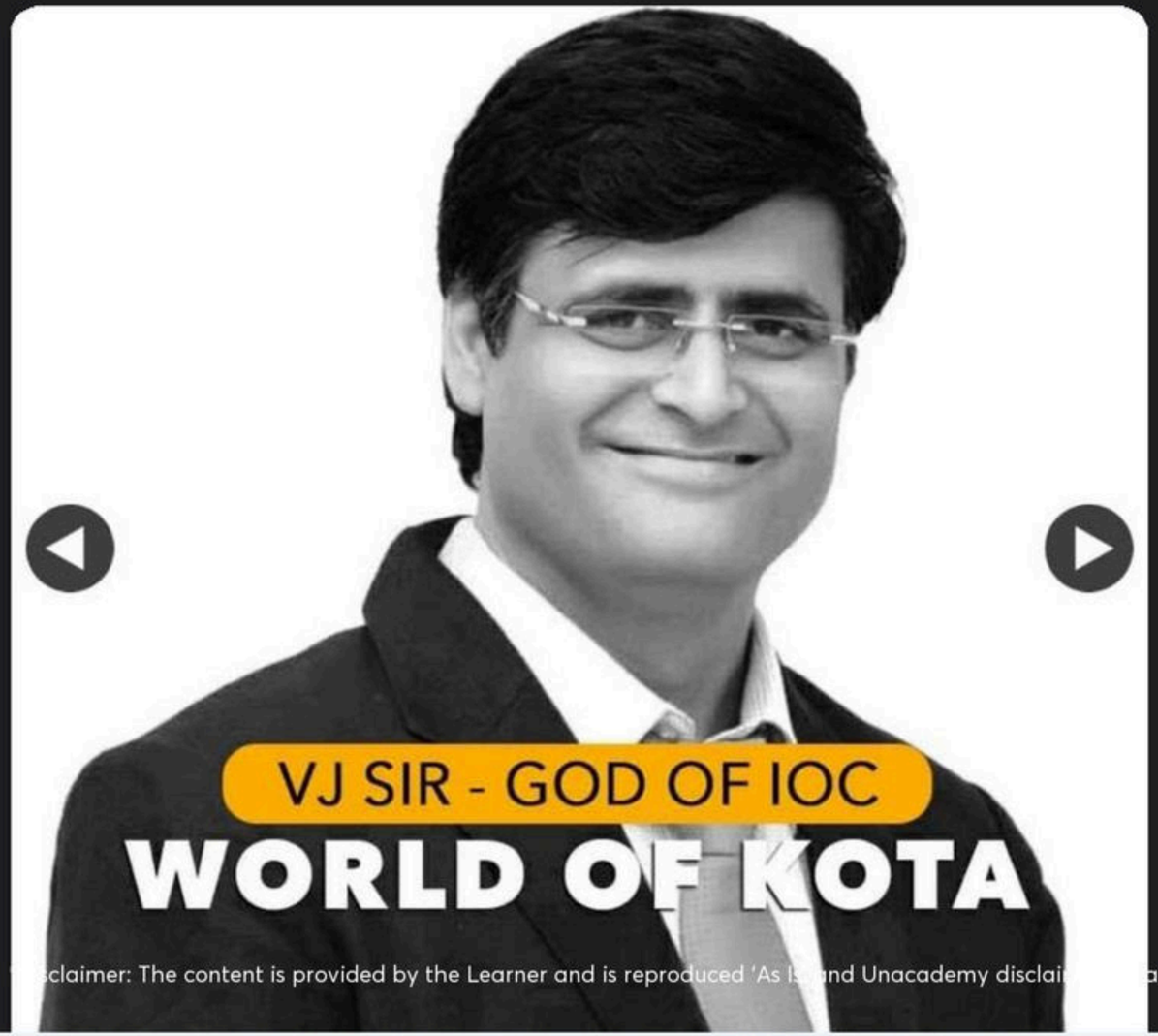
Mr. Vishal Joshi has a mammoth experience of 19 years and he has been the mentor of top brains of the country. He has mentored top rankers of IIT-JEE such as

Chitraang Murdia (AIR-1, IIT-JEE 2014), Govind Lahoti (AIR-3, IIT-JEE 2014), Nishit Agarwal (AIR-6, IIT-JEE 2012), Amey Gupta (AIR-8, IIT-JEE 2014), Lakshay Sharma (AIR- 10, IIT-JEE 2017), Yatish Agarwal (AIR-12, IIT-JEE 2017) , Rohan Garg (AIR-18, IIT-JEE2015), Vibhav Agarwal (AIR-19, IIT-JEE 2019), Shashank Agarwal (AIR-20, IIT-JEE 2018) And–

AIR- 23, 24, 27, 29, 32, 33, 36, 37, 40, 42, 48, 51, 52, 53, 54, 57, 58, 61, 63, 66, 67, 73, 78, 82, 86, 87, 91, 93, 96, 98, 99, 100

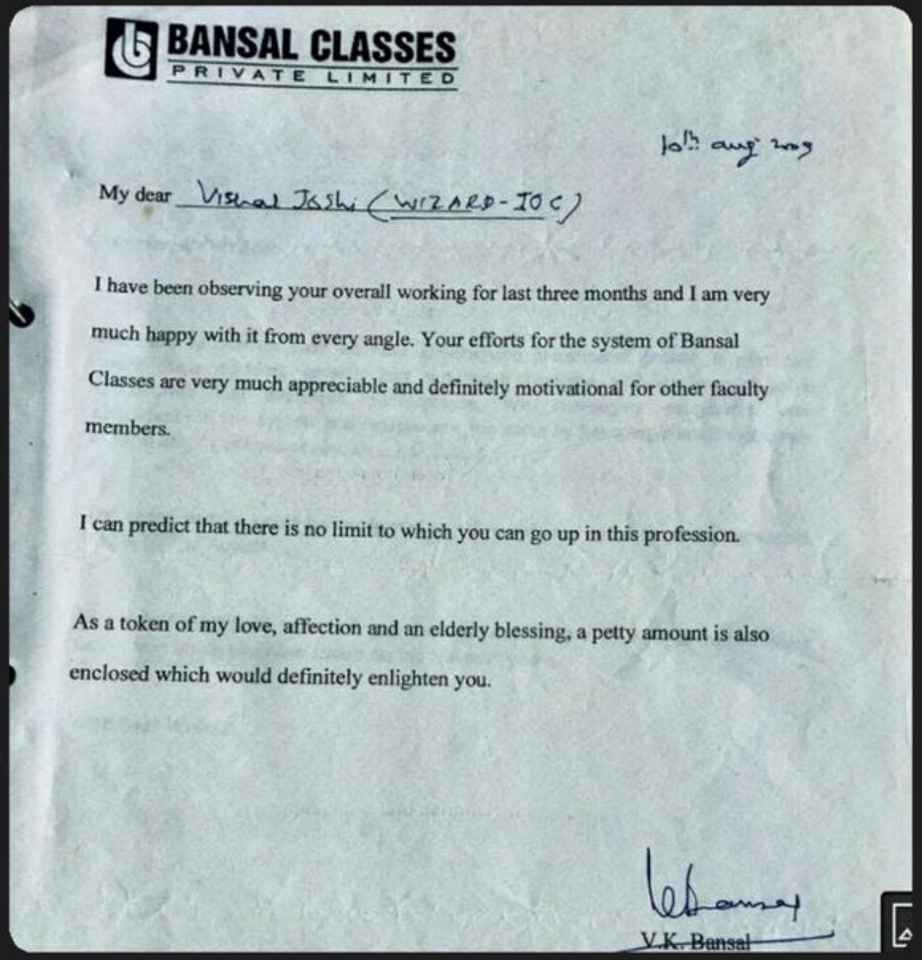
He has also been the mentor of ICHO Gold Medalist Kshitiz Garg (2015),Silver Medalist Sharvik Mittal (2016),Bronze Medalist Kushal Babel (2012), Silver Medalist Aayush Kadam (2018)and Jeevesh Kesar KVPY rank 7th (2019). One student Yash Mishra under his guidance has received the very prestigious Pradhan Mantri Bal Shakti Puraskar by the honorable President Shree Ramnath Kovind on 26th Jan 2020.

Question
from Rachit Rajvardhan



Question
from Harsh Singhvi

Wizard of IOC ka photo sir



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10th aug 2009

My dear Vishal Joshi (WIZARD-IOC)

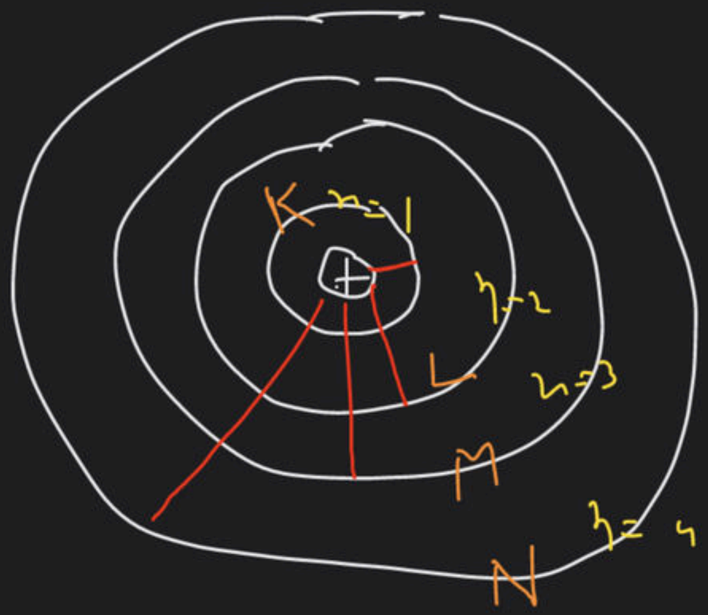
I have been observing your overall working for last three months and I am very much happy with it from every angle. Your efforts for the system of Bansal Classes are very much appreciable and definitely motivational for other faculty members.

I can predict that there is no limit to which you can go up in this profession.

As a token of my love, affection and an elderly blessing, a petty amount is also enclosed which would definitely enlighten you.

V.K. Bansal

Mr. Vishal Joshi is also an Author. He is the author of PROBLEMS AND SOLUTIONS IN INORGANIC CHEMISTRY for IIT-JEE (Main & Advanced). He is one of the best teachers who understand the challenges faced by students preparing for the IIT-JEE entrance examination and has customized fundamentals of inorganic chemistry in his book to meet student's requirements. He is known as Motivational Guru among students.



— it represents distance of $e^{\ominus}$

it indicates distance of e^- from nucleus

it also determining the energy of the electron

in general higher $n\uparrow$

higher energy

Q4 Which of the following e^- has higher energy

(1) 2^{nd} shell e^-

(2) fourth shell e^-

(3) 3^{rd} shell e^-

(4) 1^{st} shell e^-

Que Which of the following e⁻ is closest towards nucleus

(1) 1st shell e⁻

(2) fourth shell e⁻

(3) 3rd shell e⁻

(4) 2nd shell e⁻

Note = total number of orbitals in a shell = n^2

total number of e^- in a shell = $2n^2$

total number of subshell = number of shell

Ques find the number of e^- in 4^{th} shell

(a) 16 (b) 32 (c) 8 (d) 4

$2n^2$

2×4^2

$2 \times 16 = 32$

find the number of orbitals in 4th shell

n^2

$4^2 = 16$

(a) 32 (b) 16 (c) 8 (d) 4

find the number of subshells in 4th shell

(a) 8 (b) 32 (c) 16 (d) 4

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	↓	↓	↓
Shell	Subshell	Orbital	e⁻