



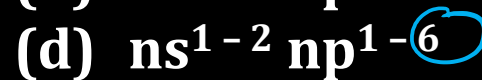
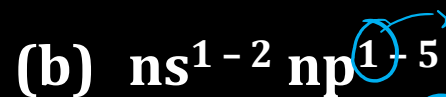
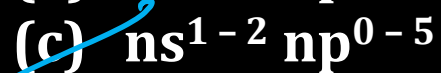
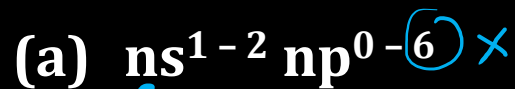
ARJUNA NEET BATCH



CLASSIFICATION OF ELEMENTS & PERIODICITY IN PROPERTIES

DPP-03

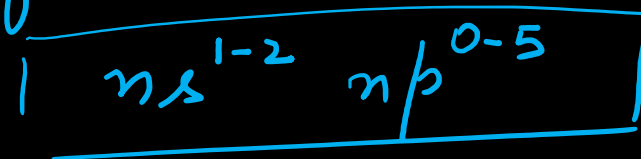
Which of the following is best general electronic configuration of normal element?



Normal elements \rightarrow s block elements + p block elements except inert gases

Inert gases \rightarrow noble gases \rightarrow $ns^2 np^6$ ✗

General electronic configuration of normal elements



Which of the following elements belong to alkali metals ?



(a) $1s^2, 2s^2, 2p^2$ ✗

(b) $1s^2, 2s^2, 2p^6, 3s^2, 3p^6, 3d^{10}, 4s^2, 4p^6, 5s^1$

(c) $1s^2, 2s^2, 2p^5$ ✗

(d) None of these ✗

\downarrow
 ns^1

Group 1 elements

\downarrow
outer electronic configuration : ns^1



- solid

→ mercury → Bromine → Francium

→ period 6
also have
inner transition
element-
(f block)



Transition metals, Hg is liquid, Up 18 \rightarrow Rn (Radon) \rightarrow noble gas



The IUPAC name of the element which is placed after Db(105) in the periodic table, will be :-

(a) Un nil pentium ¹⁰⁵

✓ (c) Un nil hexium ¹⁰⁶

(b) Un un nilium ¹¹⁰

(d) Un nil quadrium ¹⁰⁴

$Z = 106$

$Z = 106$,

1 → un

0 → nil

6 → hex

last → ium

IUPAC Name : Un nil hexium





The element with atomic number $Z = 118$ will be :-

- (a) Noble gas
- (b) Transition metal (d block) (Grp 3-10)
- (c) Alkali metal Group-1
- (d) Alkaline earth metal group-2

After $Z = 103$, group no.

$Z = 104$, Grp $\rightarrow 4$

$Z = 105$, Grp $\rightarrow 5$

$Z = 106$, Grp $\rightarrow 6$

...

$Z = 117$, Grp $\rightarrow 17$

$Z = 118 \rightarrow \text{Group } 18 \rightarrow \text{Noble gases.}$





The electronic configuration of d-block elements is exhibited by :-

~~(a)~~ $ns^{1-2}(n-1)d^{1-10}$

(c) $(n-1)d^{10}s^2$

(n)

(b) $ns^2(n-1)d^{10} \times Cu(Z=29)$
(d) $ns^2np^5 \rightarrow p\text{block}$ $\underline{3d^{10}4s^1}$

General electronic configuration of d block elements

$$ns^{1-2}(n-1)d^{1-10}$$



If the atomic number of an element is 33, it will be placed in the periodic table in the

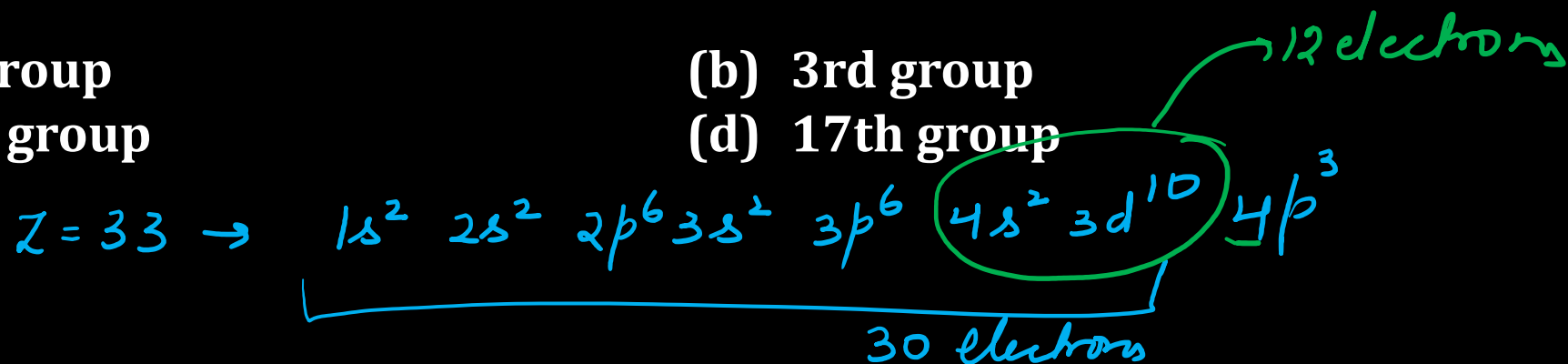


(a) 1st group

(c) 15th group

(b) 3rd group

(d) 17th group



Last electron enters into p orbital, so it is a p block element

Group no. for p block = $10 + \text{no. of electrons in p orbital}$

$$= 10 + 3$$

$$= 15^{\text{th}} \text{ group} \quad \text{Ans}$$





An element has 56 nucleons in nucleus and if it is isotonic with ${}_{30}\text{Y}^{60}$. Which group and period does it belong to?

(a) 8th group, 4th period

(b) 14th group, 3rd period

(c) 12th group, 3rd period

(d) 12th group, 4th period

→ Nucleons → Neutrons + protons = 56

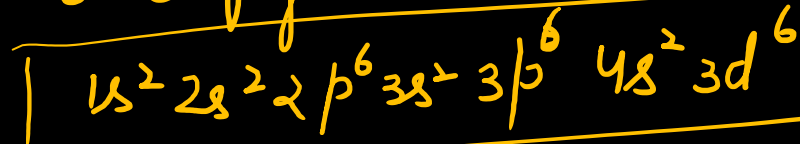
Isotonic = same no. of neutrons.

$$\begin{aligned}\text{Neutrons in } {}_{30}\text{Y}^{60} &= \text{Mass no.} - \text{Atomic no.} \\ &= 60 - 30 \\ &= 30\end{aligned}$$

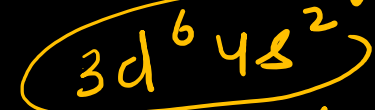
$$\begin{aligned}\text{Protons in the given element} &= 56 - 30 \\ &= 26\end{aligned}$$

$$\text{Atomic no.} = 26$$

Electronic configuration:



valence electronic configuration: $(n-1)d^{1-10} ns^{1-2}$



d-block element

$$\text{period no.} = (n) = 4$$

Group no. for d block = sum of valence electrons

$$= 6 + 2$$

$$\text{Group no.} = 8$$



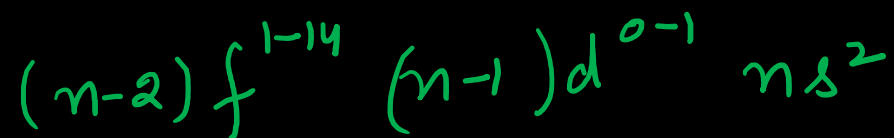
An element has electronic configuration $[\text{Xe}] 4f^7, 5d^1, 6s^2$. It belongs to block of the periodic table.



- (a) s
- (c) d

- (b) p
- ~~(d) f~~

General electronic configuration of f block elements
In f-block, the last electron goes to anti-penultimate shell $(n-2)$



$4f^7 5d^1 6s^2 \longrightarrow$ f block element

$$\begin{aligned} n &= 6 \\ (n-1) &= 5 \\ (n-2) &= 4 \end{aligned}$$





Which of the following elements do not belong to the family indicated?

(a) Cu – Coinage metal *Ag, Au*

(b) Ba – Alkaline earth metal → *Group 2*

(c) ~~Zn – Alkaline earth metal~~ → *Transition element (d block element)*

(d) Xe – Noble gas ✓

s block ✗





Thank You