

FlexiPrep: Downloaded from flexiprep.com

For solved question bank visit doorsteptutor.com and for free video lectures visit [Examrace YouTube Channel](#)

The D-And F-Block Elements: The Metallic Properties Exhibited (For CBSE, ICSE, IAS, NET, NRA 2022)

Doorsteptutor material for UGC is prepared by world's top subject experts: [fully solved questions with step-by-step explanation](#)- practice your way to success.

d block

	3	4	5	6	7	8	9	10	11	12
	3B	4B	5B	6B	7B	8B	8B	8B	1B	2B
3d	21	22	23	24	25	26	27	28	29	30
4d	39	40	41	42	43	44	45	46	47	48
5d	71	72	73	74	75	76	77	78	79	80
6d	103	104	105	106	107	108	109	110	111	112

d and f block Elements

f block

4f	57	58	59	60	61	62	63	64	65	66	67	68	69	70
5f	89	90	91	92	93	94	95	96	97	98	99	100	101	102

©FlexiPrep. Report @violations @<https://tips.fbi.gov/>

- The middle layer of the periodic table is filled with d block elements.
- The d-block elements are found in the middle of the period table.
- The d-block elements are called **transition metals** and have valence electrons in d orbitals.
- The inner d orbits of group 3 to group 13 are filled progressively. On the other hand, f block elements are found outside at the bottom of the periodic table.

- The d and f block elements hold certain properties, which make them fall into the category.
- The f-block elements, found in the two rows at the bottom of the periodic table, are called inner **transition metals** and have valence electrons in the f-orbital.
- In these elements, 5-f and 4-f orbitals are filled progressively.
- Three series of transition elements are recognized by the filling of 3-d, 4-d, 5-d orbitals.
- In the transition elements, the last electron usually enters the penultimate d orbitals i.e.. (n-1) d orbitals and that is why they are called d-block elements in the modern periodic table.
- The general valence shell configurations of every transition elements are (n-1) d-1 – 10. ns-0,1, 2.
- They have high boiling and melting point.
- 40 elements are present in d-block.
- The metallic properties exhibited by the transition elements are
 - Electrical conductivity
 - Malleability
 - Thermal conductivity
 - High tensile strength
 - Metallic character
 - Ductility
- The elements of the f block of the periodic table are two series of inner transition elements, actinoids, and lanthanoids.
- Due to the successive filling of the inner orbitals i.e.. , 4-f, the atomic and ionic sizes of these metals along the series gradually decreases.
- Lanthanoids are soft white metals and easily react with water.
- Their principal oxidation state is + 3. + 2 and + 4 are also exhibited occasionally.
- Actinoid elements are radioactive and their chemistry is complicated.
- Some applications of d- and f-block elements are in the organic syntheses, catalysts, etc.