

Model Question Paper
f- Block Elements - Part I
12th Standard
Chemistry

Reg.No. :

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I. Answer all the questions.
II. Use Blue pen only.

Time : 01:00:00 Hrs

Total Marks : 60

5 x 1 = 5

Section-A

- 1) The electronic configuration of Lanthanides is
(a) $[Xe] 4f^0 5d^0 6s^0$ (b) $[Xe] 4f^{1-7} 5d^1 6s^1$ (c) $[Xe] 4f^{1-14} 5d^1 6s^2$ (d) $[Xe] 4f^{1-14} 5d^{1-10} 6s^2$
- 2) The electronic configuration of Actinides is
(a) $[Rn] 5f^{0-14} 6d^0 7s^0$ (b) $[Rn] 5f^{0-14} 6d^{0-2} 7s^0$ (c) $[Rn] 5f^{0-14} 6d^{0-2} 7s^1$ (d) $[Rn] 5f^{0-14} 6d^{0-2} 7s^2$
- 3) The lanthanide contraction is responsible for the fact that
(a) Zn and Y have about the same radius (b) Zr and Nb have similar oxidation state (c) Zr and Hf have about the same radius
(d) Zr and Zn have the same oxidation state
- 4) The most common oxidation state of lanthanides is
(a) +2 (b) +1 (c) +3 (d) +4
- 5) Lanthanides are extracted from
(a) Limonite (b) Monazite (c) Magnetite (d) Cassiterite

Section-B

- 6) What are inner transition (f-block) elements? Give two examples.
- 7) What is the difference in the electronic configuration of transition and inner-transition elements?
- 8) What are lanthanides? Give the various oxidation states of lanthanides.
- 9) What are misch metals? Give their uses.

4 x 3 = 12

Section-C

- 10) What is lanthanide contraction? Give reason for lanthanide contraction?
- 11) What are the consequences of lanthanide contraction?
- 12) How are lanthanides isolated from monazite sand?

3 x 5 = 15

Section-D

- 13) a) Compare the properties of lanthanides and actinides.
b) What are the uses of lanthanides?
- 14) a) Write notes on the electronic configuration and oxidation states of lanthanides and actinides. Also mention the uses of actinides.
b) Discuss the positions of Lanthanides in the periodic table.

2 x 10 = 20
