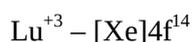
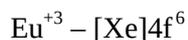
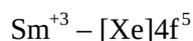
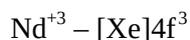
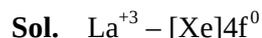


COMPLETE f-BLOCK

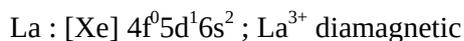
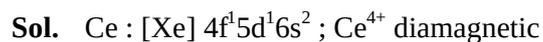
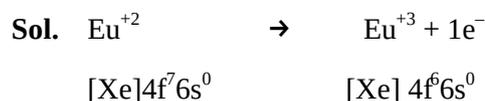
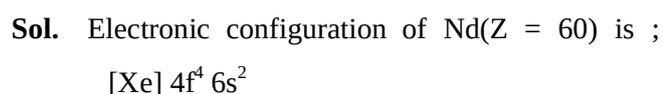
1. Number of colourless lanthanoid ions among the following is _____.
 Eu^{3+} , Lu^{3+} , Nd^{3+} , La^{3+} , Sm^{3+}
2. The electronic configuration of Einsteinium is :
 (Given atomic number of Einsteinium = 99)
 (1) $[\text{Rn}] 5f^{12} 6d^0 7s^2$ (2) $[\text{Rn}] 5f^{11} 6d^0 7s^2$
 (3) $[\text{Rn}] 5f^{13} 6d^0 7s^2$ (4) $[\text{Rn}] 5f^{10} 6d^0 7s^2$
3. The number of element from the following that do not belong to lanthanoids is :
 Eu , Cm , Er , Tb , Yb and Lu
 (1) 3 (2) 4
 (3) 1 (4) 5
4. Diamagnetic Lanthanoid ions are:
 (1) Nd^{3+} and Eu^{3+} (2) La^{3+} and Ce^{4+}
 (3) Nd^{3+} and Ce^{4+} (4) Lu^{3+} and Eu^{3+}
5. Which of the following acts as a strong reducing agent ?
 (Atomic number : $\text{Ce} = 58$, $\text{Eu} = 63$, $\text{Gd} = 64$, $\text{Lu} = 71$)
 (1) Lu^{3+} (2) Gd^{3+}
 (3) Eu^{2+} (4) Ce^{4+}
6. The electronic configuration for Neodymium is:
 [Atomic Number for Neodymium 60]
 (1) $[\text{Xe}] 4f^4 6s^2$
 (2) $[\text{Xe}] 5f^4 7s^2$
 (3) $[\text{Xe}] 4f^6 6s^2$
 (4) $[\text{Xe}] 4f^1 5d^1 6s^2$
7. Given below are two statements:
Statement (I) : In the Lanthanoids, the formation of Ce^{+4} is favoured by its noble gas configuration.
Statement (II) : Ce^{+4} is a strong oxidant reverting to the common +3 state.
 In the light of the above statements, choose the most appropriate answer from the options given below:
 (1) Statement I is false but Statement II is true
 (2) Both Statement I and Statement II are true
 (3) Statement I is true but Statement II is false
 (4) Both Statement I and Statement II are false

SOLUTIONS
1. Ans. (2)


La^{+3} and Lu^{+3} do not show any colour because no unpaired electron is present.

2. Ans. (2)

3. Ans. (3)
Sol. Cm is Actinide

4. Ans. (2)

5. Ans. (3)

6. Ans.(1)

7. Ans. (2)
Sol. Statement (1) is true, Ce^{+4} has noble gas electronic configuration.

Statement (2) is also true due to high reduction potential for $\text{Ce}^{4+}/\text{Ce}^{3+}$ (+1.74V), and stability of Ce^{3+} , Ce^{4+} acts as strong oxidizing agent.