Which of the following sets of quantum numbers is correct for an electron present in 4f orbital ? (2004)

1) $n = 4, l = 3, m = +4, s = +\frac{1}{2}$

2) $n = 3, l = 2, m = -2, s = +\frac{1}{2}$

3) $n = 4, l = 3, m = +1, s = +\frac{1}{2}$

4) $n = 4, l = 4, m = -4, s = -\frac{1}{2}$

Ans.(3) For 4f orbital, n= 4 and 1 = 3. Values of m = -3, -2, -1,0, +1, +2, +3. Combination of 1 = 3 m = +1 is the only acceptable option.