

# NCERT/CBSE CHEMISTRY CLASS 11 textbook

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Solutions/Answers to NCERT/CBSE CHEMISTRY Class 11(Class XI)textbook

## CHAPTER TWO

### STRUCTURE OF ATOM

2.30 Explain, giving reasons, which of the following sets of quantum numbers are not possible.

- (a)  $n = 0, l = 0, m_l = 0, m_s = +\frac{1}{2}$
- (b)  $n = 1, l = 0, m_l = 0, m_s = -\frac{1}{2}$
- (c)  $n = 1, l = 1, m_l = 0, m_s = +\frac{1}{2}$
- (d)  $n = 2, l = 1, m_l = 0, m_s = -\frac{1}{2}$
- (e)  $n = 3, l = 3, m_l = -3, m_s = +\frac{1}{2}$
- (f)  $n = 3, l = 1, m_l = 0, m_s = +\frac{1}{2}$

### 2.30

#### Solution

Following sets do not exist:

(a)

This set cannot exist as  $n$  cannot be 0.

(c)

As  $n=1, l=1$  is not possible.

(e)

As  $n=3$ , possible  $l$  values are 0,1,2. Hence  $l$  can't be 3..