

**PRACTICE TEST – X-CLASS( PHYSICAL SCIENCES) (STRUCTURE OF ATOM)**

**ZPSS THALLAMPADU**

**TIME: 1hr.**

**NAME OF THE STUDENT** \_\_\_\_\_

**ROLL No.** \_\_\_\_\_

**Max.Marks: 20**

Answer all the questions.

- Ramu was asked to write the electronic configuration of the element whose atomic number is 17 by using  $n\ell^x$  method. Then he wrote  $1s^2 2s^2 2p^6 3s^1 3p^6$ . But Mahesh saw and said that it was wrong. And also said that it was a violation of one rule. Then he corrected it and told the name of the element also. 4marks
  - What do  $n$  and  $\ell$  denote in  $n\ell^x$  method?
  - Which rule was violated in the electronic configuration written by Ramu? Write that rule.
  - You also write the electronic configuration written by Mahesh
  - Which element is that?
- Ramya showed the electronic configuration of an element by the following orbital diagram.

Navya saw it and told that it was wrong, it didn't support a rule. Then she corrected it. 4marks

- Which rule was not supported in the electronic configuration written by Ramya? Write that rule.
  - You also draw the orbital diagram drawn by Navya.
  - Write the name of the element.
- Write the electronic configuration of Rubidium (Rb) (Z=37) and also write the four quantum numbers of the differentiating electron. 2marks
  - Draw the shapes of orbital  $d_{x^2-y^2}$ ,  $d_{z^2}$  2marks
  - Find the  $(n + \ell)$  values of  $6s$  and  $4f$ . In which of these does electron enters first. 2marks
  - Write the value of Plank's Constant. 1mark
  - The wave length of a radio wave is 1m. Then find the frequency of it. 1mark

Choose the correct answer. Each question carries  $\frac{1}{2}$  mark.

8 x  $\frac{1}{2}$  = 4 marks.

- $n$  And  $\ell$  values of 2p orbital a)  $n=1, \ell=1$  b)  $n=2, \ell=1$  c)  $n=2, \ell=0$  d)  $n=1, \ell=2$  ( )
- The quantum number that explains about the size and energy of the orbit is a)  $n$  b)  $\ell$  c)  $m_\ell$  d)  $m_s$  ( )
- The following values are not possible for  $n, \ell, m_\ell, m_s$  ( )
  - 4, 0, 0,  $\frac{1}{2}$
  - 3, 2, -2,  $\frac{1}{2}$
  - 3, 2, -3,  $\frac{1}{2}$
  - 5, 3, 0,  $\frac{1}{2}$
- 6<sup>th</sup> electron of Carbon atom enters into a)  $s$  b)  $p_x$  c)  $p_y$  d)  $p_z$  ( )
- The wave length of visible spectrum is a) 400nm-700nm b) 40nm-70nm c) 500nm-600nm d) 4m-7m ( )
- The maximum number of electrons can be accommodated in an orbital is a) 2 b) 6 c) 8 d) 10 ( )
- The electronic configuration of silicon is ( )
  - $1s^2 2s^2 2p^6 3s^2 3p^1$
  - $1s^2 2s^2 2p^6 3s^2 3p^2$
  - $1s^2 2s^2 2p^5$
  - $1s^2 2s^2 2p^6 3s^1$
- The number of orbitals in 4f is a) 5 b) 3 c) 7 d) 2 ( )