Date Planned : __ / __ / __	Daily Tutorial Sheet - 8	Expected Duration : 90 Min
Actual Date of Attempt : __ / __ / __	Level - 2	Exact Duration :_____

96. Which of the following transitions are not allowed in the normal electronic emission spectrum of an atom?

(A) $1s \rightarrow 2s$ **(B)** $2p \rightarrow 1s$ **(C)** $5d \rightarrow 4p$ **(D)** $5p \rightarrow 3s$

***97.** Select the correct set (s) of quantum numbers

(A) $n = 3, l = 0, m_l = -1$ **(B)** $n = 3, l = 3, m_l = -2$

(C) $n = 3, l = 2, m_l = -2$ **(D)** $n = 3, l = 1, m_l = 0$

***98.** Select the correct curve(s):

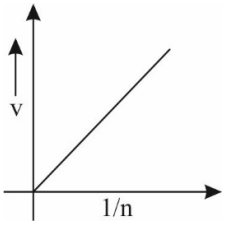
If v= velocity of electron in Bohr's orbit

r = Radius of electron in Bohr's orbit

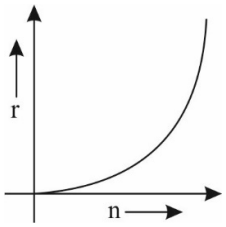
P.E. = Potential energy of electron in Bohr's orbit

K.E. = Kinetic energy of electron in Bohr's orbit

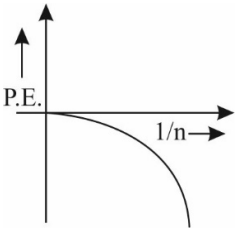
(A)



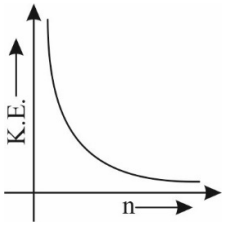
(B)



(C)

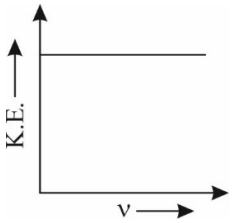


(D)

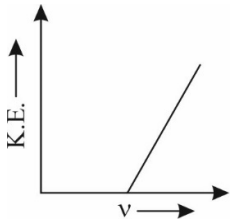


***99.** Which is/are correct graph with respect to photoelectric effect?

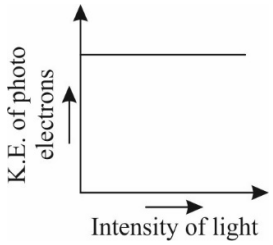
(A)



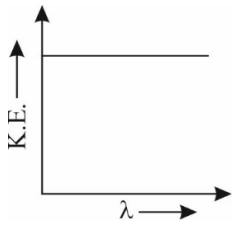
(B)



(C)



(D)



***100.** Select the correct statement (s):

(A) Radial function [R(r)] is a part of wave function which depends upon quantum number n only

(B) Angular function depends only on the direction, and is independent to the distance from the nucleus

(C) $\Psi^2(r,\theta,\phi)$ is the probability density of finding the electron at a particular point in space

(D) Radial distribution function $(4\pi r^2R^2)$ gives the probability of the electron being present at a distance r from the nucleus

***101.** Select the correct statement(s):

(A) An orbital with $l = 0$ is symmetrical about the nucleus

(B) An orbital with $l = 1$ is spherically symmetrical about the nucleus

(C) $3d_{z^2}$ is spherically symmetrical about the z-axis

(D) All are correct

***102.** In a sample of H-atoms electrons are de-excited from 4^{th} excited state to ground state. Which is/are correct statement?

(A) No line observed in P-fund series

(B) Total ten lines observed in spectrum

(C) 4 line in UV-region and 3 line in visible region are observed

(D) One line observed in Brackett series

***103.** Select incorrect statement(s).

(A) If the value of $l = 0$, the electron distribution is spherical

(B) The shape of the orbital is given by magnetic quantum number

(C) Angular momentum of 1s, 2s, 3s orbit electrons are equal

(D) In an atom, all the electrons travel with the same velocity

***104.** Hydrogen has:

(A) half filled subshell **(B)** half filled shell

(C) one electron in valence shell **(D)** half filled orbital

***105.** Select the correct statement(s):

(A) In wave mechanical model the energy of electron in the orbital remains constant

(B) d_{xy} orbital lies in yz plane

(C) Nodal planes are yz and xy in $d_{x^2-y^2}$ orbital

(D) None of the above