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Max Marks: 20

CHAPTER-2 TEST

Q 1.	Out of principal, angular, magnetic and spin quantum number, which quantum number determines the? (a) Shape of the orbital (b) Number of orbitals in an orbit (c) Size of the orbital (d) Spin orientation of the electron.	2
Q 2.	What is the Hund's rule of maximum multiplicity? Explain with suitable example.	2
Q3	A bulb emits light of wave length 4500Å.The bulb is rated as150 watt and 8% of the energy is emitted as light How many photons are emitted by the bulb per second? OR When electromagnetic radiation of wavelength 300 nm falls on the surface of sodium, electrons are emitted with a kinetic energy of 1.68×10^5 J mol^{-1}. What is the minimum energy needed to remove an electron from sodium? What is the maximum wavelength that will cause a photoelectron to be emitted?	3
Q4.	Calculate the uncertain it in the velocity of a cricket ball of mass 150 g, if uncertainty in its position is of the order of 1 Å.	2
Q5.	Write Electronic Configuration of Following Elements. (a) Chromium (Cr) [At. No. (24)] (b) Cu [At. No (29)] (c) Mg [12] (d) Zn [At. No. (30)]	2
Q6.	Calculate the Mass of a Photon with wavelength 3.6 Å.	2
Q7.	Define the following terms: (i)Aufbau Principle (ii)Isotopes (iii) Isobars (iv) Photoelectric Effect	2
Q8.	***(p)*** Designation for an orbital with n = 4 and l= 3 is **(a)** 4s **(b)** 4p **(c)** 4d **(d)** 4f ***(q)*** Calculate the radial and angular nodes in 2p orbital.	2
Q9.	***(p)*** Calculate the energy Associated with the first orbit of He^+. What is the radius of this orbit? ***(q)*** Explain, Heisenberg Uncertainty principle.	2 1

Constant:

h = 6.636 x 10^{-34} js^{-1} (1 Å=10^{-10} m)