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MORE QUESTIONS SOLVED

I. Very Short Answer Type Questions

Question 1. Give the relation between wavelength and momentum of moving microscopic particle. What is the relation known as?
Answer:

$$\text{Relation: } \lambda = \frac{h}{mV}$$

The relation is known as de Broglie's relationship.

Question 2. Write the electronic configuration and number of unpaired electrons in Fe^{2+} ion.
Answer:
Fe (Z = 26) : $[Ar]^{18}\ 3d^6 4s^2$
Fe^{2+}ion : $[Ar]^{18}\ 3d^6$
No. of unpaired electrons = 4

Question 3. What are degenerate orbitals ?
Answer: Orbitals having same energy belonging to the same subshell.

Question 4. What is the most important application of de Broglie concept?
Answer: In the construction of electron microscope used for the measurement of objects of very small size.

Question 5. Which one Fe^{3+}, $Fe^{2+}$is more paramagnetic and why?
Answer: As Fe^{3+} contains 5 impaired electrons while Fe^{2+} contains only 4 unpaired electrons. Fe^{3+} is more paramagnetic.

Question 6. Which element does not have any neutron?
Answer: Hydrogen.

Question 7. What is value of Planck's constant in S.I. units?
Answer: 6.62×10^{34} Js.

Question 8. Arrange X-rays, cosmic rays and radio waves according to frequency.
Answer: Cosmic rays > X-rays > radio waves.

Question 9. Which series of lines of the hydrogen spectrum lie in the visible region?
Answer: Balmer series.

Question 10. What is the difference between ground state and excited state?
Answer: Ground state means the lowest energy state. When the electrons absorb energy and jump to outer orbits, this state is

called excited state.

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