

PHY407

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1. What is NMR

Nuclear Magnetic resonance

Observes specific quantum mechanical magnetic properties

--->> all of the above

none of the above

2. To increase field strength in NMR, the following can be used

Magnets

Solenoids

Iron

--->> Superconductors

3. The fundamental condition for the magnetic resonance absorption is

$U = B_0 Z$

$U = m B_0$

$U = NMR$

--->> $\omega_0 = B_0$

4. The condition whereby spins of electrons, align in a regular pattern with neighbouring spins pointing in opposite directions is called

Ferromagnetism

Paramagnetism

Antidiamagnetism

--->> Antiferromagnetism

5. Which equation connects the magnetic moment to angular momentum

$\tilde{\mu}_B, \tilde{\mu}_L = 1$

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$$12 = \tilde{A}, \hat{A}\mu$$

--->> non of the above

6. The magnetic susceptibility of iron ammonium alum is 7.54×10^{-3} determine the relative permeability

--->> 1.00754

1.266

1.456

1.0720

7. When does saturation occur in ferromagnetic resonance

High rf power levels

--->> Low rf power levels

High susceptibility

Low susceptibility

8. Resolution of imaging technique depends on

Electric field

--->> Magnetic field strength

Magnetic field

Electric field strength

9. MRI stands for

Mechanical Research

Micro Radiation Investigation

--->> Magnetic Resonance Imaging

none of the above

10. In magnetism what is the source of magnetic dipoles

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Resonance

--->> Orbital motion of the electrons in atoms & molecules

none of the above

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