**BHARATI VIDYAPEETH INSTITUTE OF TECHNOLOGY**

**Question Bank (I-Scheme)**

**Name of subject: Elements of Electrical Engg. Unit Test :I**

**Subject code: 22215 Course : EJ/CM/IF**

**Semester: II**

**CHAPTER-1(Magnetic Circuits)**

**(2 Marks)**

1. Define Reluctance .What is its unit?
2. Define i) Magnetic flux, ii) Magnetic Flux density.
3. State the Lenz’s law. Give expression for the induced voltage.
4. State Faraday’s law of Electromagnetic Induction.
5. State Fleming’s right hand rule.

**(4 Marks)**

1. Define Self Induced EMF and Mutually Induced EMF with neat sketch.
2. Compare Magnetic Circuit and Electric Circuit.
3. Write the symbol and unit of following:
4. Magnetic flux density
5. Magnetic field strength
6. Reluctance
7. Self inductance
8. Explain B-H Curve and Draw with all parameters.
9. Find relectance, flux, M.M.F required and exciting current for an iron ring with 200 turns having diameter of 15 cm and 10 cm2 cross sectional area if flux density 1 wb/m2 and permeability of 500.

**CHAPTER-2(AC Fundamentals)**

**(2 Marks)**

1. Write any two advantages of AC over DC.
2. Define Peak Factor and Form Factor.
3. Define leading and lagging phase difference.
4. An Alternating current is given by i=28.28sin(2∏ 50t) Find R.M.S value and Average value.
5. Draw the Impedance Triangle of series R-C circuit.

**(4 Marks)**

1. Define Active Power, Reactive Power, Apparent Power and Power factor.
2. For RC circuit:
3. Draw the circuit diagram
4. Write voltage and current equations
5. Draw phasor diagram
6. Draw power triangle
7. A resistance of 5Ω and capacitive reactance of 10Ω are connected in series if the current through circuit is 3A. find i)Total voltage ii) power factor and its nature. Assume f = 50Hz.

**CHAPTER-3(Polyphase AC Circuits)**

**(2 Marks)**

1. Define Phase Sequence.
2. State the meaning of 3 phase Balanced and Unbalanced Load.
3. State any four advantages of Poly phase Circuit over Single Phase circuit.
4. Draw 3- phase voltage waveform of a.c. supply with respect to time.

**(4 Marks)**

1. Draw delta connected load. State relation between:

i) Line voltage and phase voltage. ii) Line current and phase current.

1. A balanced 3-phase star connected load consist of three resistances each of four ohms connected to 400V, 3 phase 50 Hz supply, find (i) Phase voltage (ii) Phase current (iii) Line current (iv) Power consumed.
2. Compare star and delta connected system (4 points)

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*