Question Bank For UT-I

Program: ME3I

COURSE: Basic Electrical and Electronics Engineering (BEE)   **CODE : 22310**

2 Marks Questions: UNIT –I

1. Define Power and Electrical Energy.
2. Define Magnetic Flux Density (B) and Magnetic Field Strength (H)
3. State Faraday's Laws of Electromagnetic Induction.
4. State Lenz's Law.
5. Define EMF and Current.

4 Marks Questions: UNIT –I

1. Compare Electric Circuit and Magnetic Circuit. (2-Similarities and 2-diffrences)
2. Draw and explain B-H Curve **OR** Magnetization Curve.
3. Draw a hysteresis loop and state its effect on hysteresis loss.
4. State Fleming's Left Hand and Flemings Right Hand Rule.
5. Define mutually induced EMF.
6. Define self-inductance and Mutual-Inductance.
7. Differentiate Dynamically Induced EMF with Statically Induced EMF (4- Points)

2 Marks Questions: UNIT –II

1. Differentiate between AC & DC electrical quantities.
2. Define Frequency and Time Period.
3. An AC current is given by i= 10√2sin314t Calculate- RMS and Average Values.
4. Define Phasor.
5. Define inductive and capacitive reactance.
6. Draw a Power triangle and Label it.
7. State concept of Impedance triangle.
8. Define Power factor and Q-factor.

4 Marks Questions: UNIT –II

1. State advantages of 3∅ System Over1∅ System?
2. Draw Delta Connected 3∅ supply system-
    Mark Line Currents & Line Voltages, Phase Currents & Phase Voltages.
3. Compare Star Connection with Delta Connection.

4. Draw circuit, waveforms and Phasor Diagram for pure Capacitive Circuit. What will be power factor of the circuit?

5. Draw circuit, waveforms and Phasor Diagram for pure Series R-L Circuit. Write equation of Power.

6. A circuit consists of series connected 20Ω resistance and 0.2H Inductance, connected across a 230 V, 50 Hz. A.C. Supply. Calculate – Impedance, Power Factor, Current and Active Power.

7. Draw Power Triangle and write about various powers and power factor.

8. A resistance of 5Ω and Capacitive reactance of 10Ω is connected in series, if the current through the circuit is 3A, Find Impedance, Voltage, Phase angle & power factor.

9. Define Instantaneous Value, Amplitude, RMS value and Average Value of an A.C. Quantity.

10. An AC Voltage is represented by v=25sin(200πt) Calculate- Amplitude, Time period, Frequency, Angular Velocity, Form factor and Crest Factor.

2 Marks Questions: UNIT –III

1. State working Principle of transformer.
2. Compare Core type and Shell type transformer (any 2 points)
3. State EMF equation of a transformer.
4. Define transformation ratio, write equations for it.
5. "Rating of a transformer is always in VA/KVA". Explain.
6. Give Sample ratings of a 1Ø transformer.
7. List various Losses in a transformer.
8. Classify single phase Induction Motor.
9. Give Sample ratings of a 1Ø Induction motor.
10. State 2 applications of Universal and stepper Motor.
11. Give four applications of Servomotor.

4 Marks Questions: UNIT –III

1. Draw and explain Construction of a large single phase transformer.
2. Derive EMF equation of a single phase transformer.
3. State the meaning of Efficiency and Regulation of a transformer.
4. A 1Ø transformer 100 and 300 turns on Primary and secondary winding respectively. Voltage applied to primary is 230V at 50Hz. Cross sectional area of core is 200 sq.cm Calculate-
    i)   Maximum Flux Density
    ii)   Induced EMF in Secondary winding

5. Draw a neat labeled diagram of an autotransformer and list 2 applications.
6. Differentiate Two winding transformer with Auto Transformer.
7. Draw connection diagram of any type of single phase Induction motor and give its 2 applications.
8. With neat schematic diagram and vector diagram, explain working of Capacitor start type single phase Induction motor.
9. State working principle of Universal motor with the help of diagram.
10. Describe working of AC Servomotor with Sketch.