IMP Question for BEEE (UNIT- III)

1. Define Magnetic Flux, Magnetic flux density, Magnetic Intensity, Reluctance, Leakage flux ,Leakage factor.
2. Define Fringing, Magnetic Hysteresis, Residual magnetism and Retentivity, Coercive force, Faradays Law of Electromagnetic Induction, Lenz Law.
3. What is hysteresis loop in a magnetic material? Explain.
4. Do the comparison between the Electrical & Magnetic circuit on the basis of similarities and dissimilarities.
5. Classify different types of Transformer?
6. Draw the approximate equivalent circuit of transformer?
7. Write the basic principle of operation of transformer and derive its EMF equation?
8. Explain different types of losses occur in the transformer?
9. How will you determine the transformer losses in the laboratory?
10. Draw the phasor diagram of transformer for:
    - No load Condition
    - At unity PF load
    - At lagging PF load
    - At leading PF load
11. A 25 kVA transformer has 500 turns on the primary and 40 turns on the secondary winding the primary is connected to 3000 V, 50 Hz mains. Calculate
    (1)Primary and Secondary current in full load
    (2)Secondary EMF
    (3)The maximum flux in the core.
    Neglect magnetic leakage resistance of the winding and the primary no load current in relation to the full load current?
12. A flux density of 1.2 Weber per metre square is required in the 2mm air gap of an electromagnet having an iron path 1 metre long. Calculate the magnetizing force and current required if the electromagnet has 1273 turns. Assume relative permeability of iron is to be 1500.
13. A 10 KVA, 200/400V, 50 Hz, single phase transformer gave the following test results:
    OPEN CIRCUIT TEST--- 200 V, 1.25 A, 120 W on low voltage side
    SHORT CIRCUIT TEST -----20 V, 25 A, 200 W on high voltage side
    Calculate (1)The magnetizing current at normal voltage and frequency (2) Obtain the efficiency when the transformer is supplying rated load at 0.8 power factor lagging.

IMP Question for BEEE (UNIT- IV)

1. Describe the constructional feature of DC machine with net sketch?
2. Explain the working principle of DC motor with necessary diagram?
3. Develop an EMF equation of DC machine?
4. Explain the classification of DC Generator?
5. Describe the constructional feature of Induction motor with net sketch?
6. Explain the working principle of Induction motor with necessary diagram
7. What is slip? Draw the torque slip characteristics of three phase IM?
8. Describe the constructional feature of Synchronous machine with net sketch?
9. Explain the working principle of Induction motor with necessary diagram
10. The armature of a 12 pole DC shunt generator has 50 slots and is wave sound with 12 conductors per slot. The generator is running at a speed of 625 RPM and supplies a resistive load of 15 ohm at a terminal voltage of 300 volt the armature resistance is 0.5 ohm and field resistance is 60 ohm. Find the armature current, the generated EMF and the flux per pole.
11. A 3 phase induction motor is wound for 4 poles and is supplied from a 50 Hz system. Calculate
    (1) Synchronous speed
    (2) Actual speed of the motor when running at 4% slip
    (3)frequency of EMF induced in rotor.

IMP Question for BEEE (UNIT- V)

1. What is PN junction Diode? Draw the V-I Characteristics of PN junction Diode?
2. State & Prove De-Morgan's theorem?
3. Explain operation of logic gates with truth table?
4. Explain Half Adder & Full Adder.
5. Define RS flip flop & JK flip flop
6. Write short note on classification of Semiconductor.
7. What s PN Junction? Explain the operation of PN junction under forward bias & reversed biased condition.
8. Draw forward bias & reversed bias characteristics of diode.
9. Explain Transistor
10. Convert
    - $(546)_8=(\quad)_{16}$
    - $(A4F)_{16}=(\quad)_8$
    - $(3F2A)_{16}=(\quad)_2$
    - $(206.4051)_8=(\quad)_{10}$
    - $(101011000100.011010111)_2=(\quad)_8$