Roll No. ..... **Total Pages : 4**

2204/M

K-33/2051

BASIC ELECTRICAL ENGINEERING

Paper–DECE-101

Semester–II

Time allowed : 3 Hours] [Maximum Marks : 50

Note : The candidates are required to attempt three questions each from section A and section B carrying 5 marks each and the entire section C consisting of 10 questions carrying 2 marks each.

SECTION-A

1. Write a short note on : 5

   (i) Magnetic leakage

   (ii) Fringing.

2. Four resistances 56 , 50 , 40 and R are in parallel across a d.c. supply. Current in 56 resistance is 5A and the total supply current is 37.6 A. Find R. 5

3. Discuss the concept of constant current source with graphical representation of the characteristics of ideal and practical current sources. 5

4. State and explain Fleming's Left hand Rule. 5

SECTION-B

5. Define cycle, frequency, waveform, r.m.s. value and average value of an alternating quantity. 5

6. Why power factor is required to be improved, mention the advantages of improved power factor? 5

7. A 50 Hz voltage of 115 (r.m.s. value) is applied across a 70 resistance :

(i) Write the equations for the voltage and the resulting current. 3

(ii) Draw voltage and current waveforms. 2

8. Explain the concept of resonance in R-L-C Series Circuit. 5

SECTION-C

9. All questions are compulsory : $10 \times 2 = 20$

(i) Define Branch in an electrical circuit.

(ii) What is meant by the term single phase circuit?

(iii) Two identical coils with L = 0.03 H have a coupling coefficient of 0.8. Calculate the mutual inductance.

(iv) State Kirchoff's Current Law.

(v) Define magnetic flux ( ) and magnetic flux density (B).

(vi) Draw power triangle. Also mention the units.

(vii) On what factors resistance depends? Explain.

(viii) Write any two points of comparison between magnetic and electric circuit.

(ix) Define Capacitive Reactance. Give its units.

(x) Can we use Ohm's law for AC circuits?