B.E./ B.Tech. (Chemical Engineering) B. Text. Second Semester (Old Course)
Electrical Engineering - II : 2 S 6

P. Pages : 1

Time : Two Hours

0290

AW - 3543

Max. Marks : 40

Notes :
1. Due credit will be given to neatness and adequate Dimensions.
2. Assume suitable data wherever necessary.
3. Illustrate your answer necessary with the help of neat sketches.

1. a) Define for sinusoidal waveform — 7
   1) Average value
   2) RMS value
   3) Maximum value
   4) Peak factor

   b) Derive the expression for current when pure inductor is connected across an alternating voltage. Draw the waveform and its phasor diagram. — 7

OR

2. a) Derive the relationship between line voltage, phase voltage, line current and phase current for a balanced delta connected load. — 7

   b) Define resonance. Derive the expression for resonant frequency. — 7

3. a) Define transformer. State its working principle. Differentiate between core and shell type transformer. — 7

   b) What do you mean by efficiency of a transformer. Derive the condition for maximum efficiency. — 6

OR

4. a) With a neat diagram explain the construction and working of fluorescent lamp. — 6

   b) A 25 KVA, 3300/250V, 50 Hz single phase transformer has iron loss of 300 watt and copper losses at full load of 400 watts. Find the efficiency of transformer at half load at 0.8 lagging power factor. Also find maximum efficiency. — 7

5. a) With a neat sketch, explain the construction of dc motor. — 7

   b) Derive the expression for back emf of dc motor. Explain the significance of back emf. — 6

OR

6. a) Describe the construction and working of shaded pole single phase Induction motor. — 7

   b) Draw a neat diagram of three point starter and explain its working. — 6

****

AW - 3543

1