Exam.Code:0906
Sub. Code: 6249

2032

B.E. (Electrical and Electronic Engineering),
Second Semester
EEEC-201: Basic Electrical Engineering

Max. Marks: 50

Time allowed: 3 Hours

NOTE: *Attempt five questions in all, including Question No. 1 which is compulsory and selecting two questions from each Unit.*

x-x-x

I. Attempt the following:-

a) Define maximum power transfer theorem.

b) What information phaser diagram conveys?

c) What is the role of B/H curve in selecting of cone of transformer?

d) What is voltage regulation?

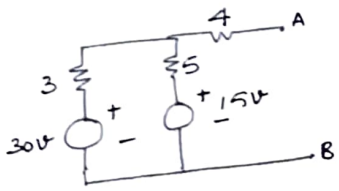
e) Draw a single line diagram having generator, transformer, bus bar and transmission line. (5x2)

UNIT - I

II. a) State Thevenin's Theorem with the help of an example.

b) Obtain Thevenin and Norton equivalent circuits for the circuit as shown in Fig.1.

All resistances are in Ohms.



Fig, 1 (2x5)

III. a) Derive an expression for instantaneous value of alternating sinusoidal emf in terms of maximum value, angular frequency and time.

b) A Circuit has a resistance of 16μ, an inductance of 0.16H and capacitance of 100μF is series is connected across 220V, 50H2 supply. Calculate impedance, Current and phase difference between current and supply voltage. (5,5)

IV. a) Draw 3- φ voltage waveforms for a phase sequence RYB.

b) Determine line currents in an unbalanced Y connected load supplied from a symmetrical 3-φ, 440v, 3-wire system. The branch impedances of the load are

$Z_1 = (4 + j20)\ \mu$

$Z_2 = (5 - j40)\ \mu$

$Z_3 = (4 + j30)\ \mu$

The sequence is RYB. (2x5)

P.T.O.

UNIT - II

V. a) Discuss working of transformer on capacitive load condition with the help of phaser diagram.

b) What is the condition of maximum η of T/F. (2x5)

VI. a) What are the various transmission voltage level?

b) Discuss principles of working of 3- φ Induction motion. (2x5)

VII. A magnetic circuit with uniform cross-sectional area of $6cm^2$ consists of a steel ring with a mean magnetic length of 80cm and air gap of 2cm. the magnetizing winding has 540 AT. Estimate the magnetic flux produced in gap. The magnetizing curve of Cart steel can be drawn at there points.

B (wb/m^2)	0.12	0.14	0.16	0.18	
H (AT/m)	100	200	240	360	(10)

x-x-x