PVP 14

Code: CE2T5, ME2T5

I B.Tech - II Semester – Regular Examinations – April 2016

BASIC ELECTRICAL & ELECTRONICS ENGINEERING

(Common for CE & ME)

Duration: 3 hours Max. Marks: 70

PART – A

Answer ***all*** the questions. All questions carry equal marks

11x 2 = 22 M

1.

a) Write the basic function of air pre-heater and Economizer.

b) What are the different sources of energy available in nature?

c) Define Passive Elements and give the example.

d) The voltage across 5Ω resistor is 10 volts, Find the current and power dissipated in the resistor.

e) Draw the speed-torque characteristics of shaded pole motor.

f) Write any three advantages of slip-ring induction motor over squirrel cage?

g) List out the different losses in a Transformer.

h) Explain the principle of arc welding in brief.

i) Draw the V-I characteristics of a P-N junction diode

j) Draw the symbols of P-N-P and N-P-N transistors and explain each terminal.

k) Explain faraday's laws of electromagnetic induction.

PART – B

Answer any ***THREE*** questions. All questions carry equal marks.

3 x 16 = 48 M

2.

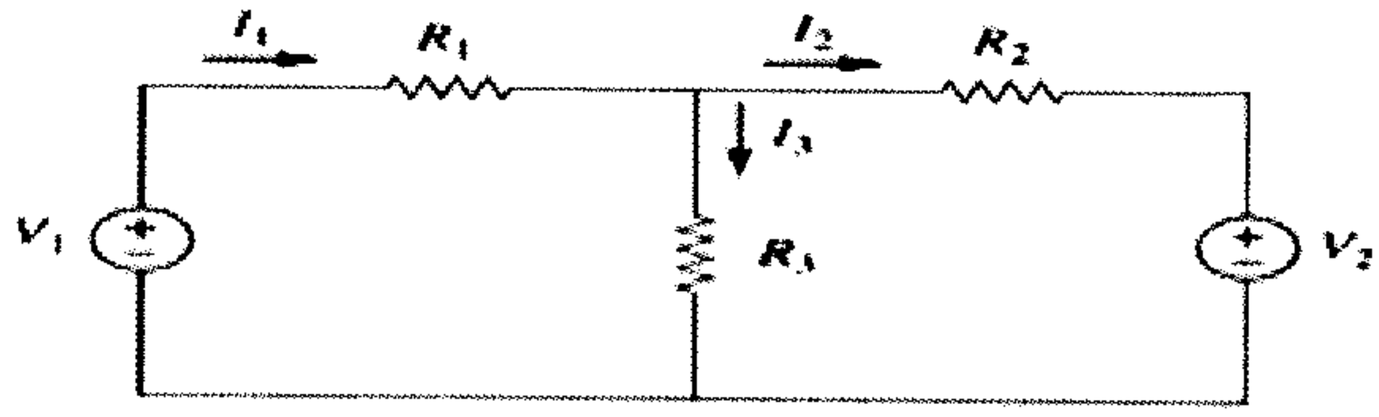
a) Explain the layout of Hydro electric plant with a neat sketch. 8 M

b) Discuss the solar energy and wind energy with its merits and demerits. 8 M

3.

a) Derive the relationship between star to delta transformation, also give an example. 8 M

b) Find the current in the elements of the following network, Take V_1=10V, V_2= 30V, R_1=5Ω, R_2=3Ω, R_3=6Ω. Also Find the power dissipated in each resistor. 8 M



4.

a) Explain the construction details of Three-phase induction motor. 8 M

b) Discuss the starting methods of Single-phase induction motor. 8 M

5

a) Define 'Transformer' and derive the EMF equation of a single-phase transformer. 8 M

b) What are the requirements of welding and write the difference between AC and DC welding. 8 M

6

a) What is a Rectifier and Explain Full wave rectifier with the help of output waveforms and ripple factor. 8 M

b) Draw the input and output characteristics of a BJT in CE configuration and Explain. 8 M