Exam.Code:0906
Sub. Code: 33267

2015

B.E., Second Semester

EEEC-X01: Basic Electrical and Electronics Engineering

Max. Marks: 50

Time allowed: 3 Hours

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

x-x-x

I. Attempt the following:-

a) State and prove maximum power transfer theorem.

b) Describe a star and delta connected system.

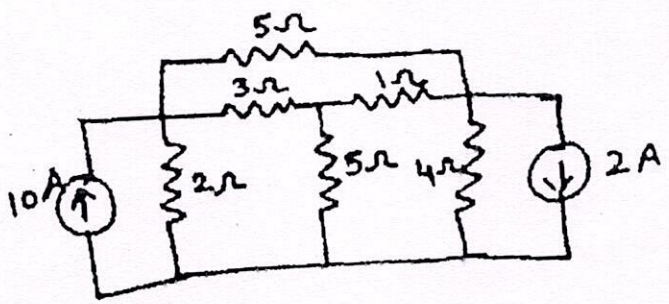
c) What do you mean by losses and efficiency of a transformer?

d) Draw the circuit diagram of DCTL to perform logical AND.

e) What are the advantages of FET over BJT? (5x2)

UNIT - I

II. Use nodal analysis to find the currents in various resistors of the circuit shown in this figure.



(10)

III. a) Two impedances $z_1 = 10+j5\Omega$ and $z_2 = 8 + j6\ \Omega$ are connected in parallel across a voltage $V = 200 + j0$. Calculate the circuit current, power factor and reactive power.

b) Show how three-wattmeter method can be used for power measurement with the help of diagram. (2x5)

P.T.O.

IV. What do you mean by open-circuit and short-circuit test on transformers? Obtain the equivalent circuit of 1-ϕ, 4kVA, 200/400 V, 50 Hz transformer from following test results:

O.C. → 200V, 0.7A, 70W (L.V. primary side)

S.C. → 15V, 10A, 80W (H.V. Secondary side) (10)

UNIT - II

V. a) What is zener diode? Explain its use as voltage regulator.

b) Why NAND gate is called a universal gate? Explain with examples. (2x5)

VI. a) Draw the logic circuit for

$Y = A\bar{B}C + ABC$

and then simplify and draw simplified circuit.

b) Draw the basic characteristics of a BJT. Discuss its operation in common base mode.

(2x5)

VII. Write notes on the following:-

a) Clipper and clampers

b) Light Emitting diode (2x5)

x-x-x