GIET UNIVERSITY, GUNUPUR – 765022

RD19BTECH014

Registration No: | | | | | | | | | | |

Total Number of Pages : 2 AR-19

B.TECH 1ST SEMESTER EXAMINATIONS (REGULAR), NOV/DEC 2019

BESBS1034 – Basic Electrical Engineering

Time : 3 Hours Maximum : 70 Marks

Answer ALL Questions

The figures in the right hand margin indicate marks.

PART – A: (Multiple Choice Questions) 10 × 1=10 Mark

Q.1. Answer *All* Questions.

a Ohm's law is not applicable to [CO1][PO1]
(a) DC circuits (b) High currents (c) Small resistors (d) Semi-conductors

b Specific resistance of a substance is measured in [CO1][PO1]
(a) ohms (b) mhos (c) ohm-cm (d) cm/ohm

c For solving parallel ac circuit, the method used is [CO2][PO1]
(a) Vector method (b) Admittance method (c) Symbolic or j – method (d) All of these

d The net power in a series R-C circuit is [CO2][PO1]
(a) Zero (b) Positive (c)Negative (d) None of these

e Which DC motor is generally preferred for cranes and hoists? [CO3][PO1]
(a) Series motor (b) Shunt motor
(c) Cumulatively compounded motor (d) Differentially compounded motor

f The basic function of a transformer is to change [CO3][PO1]
(a) The level of the voltage (b) The power level
(c) The power factor (d) The frequency

g In electrical measuring instruments electrical energy is converted to [CO3][PO1]
(a) Mechanical energy (b) Heat energy (c) Chemical energy (d) Light energy

h Which triggering is the most reliable? [CO4][PO2]
(a) Forward voltage triggering (b) Gate triggering.
(c) *dv / dt* triggering. (d) Thermal triggering

i Out of the following which one is not a unconventional source of energy? [CO4][PO2]
(a) Tidal power (b) Geothermal energy (c) Nuclear energy (d) Wind power

j The efficiency of the power transformer is [CO4][PO2]
(a) 50% (b) 60% (c) 80% (d) 95%

PART- B: (Short Answer Questions) 10X2=20 Marks

Q.2. Answer All Questions

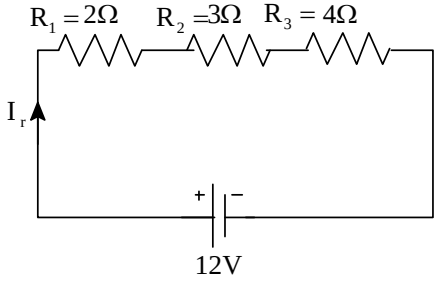
a State the Kirchhoff's current law? [CO1][PO1]
b List out the limitations of ohms law. [CO1][PO1]
c Define the RMS value. [CO2][PO1]
d Explain magnetic flux density? [CO2][PO1]
e Classify the DC generators. [CO3][PO1]
f List out the applications of synchronous motor? [CO3][PO1]
g Classify the measuring instruments. [CO4][PO2]
h Explain the fundamental concept of thyristor? [CO4][PO2]
i Express the Synchronous speed and slip of Induction motor? [CO4][PO2]
j Define function of a fuse? [CO4][PO2]

PART – C: (Long Answer Questions) 4×10=40 Marks

Answer *ALL Q*uestions

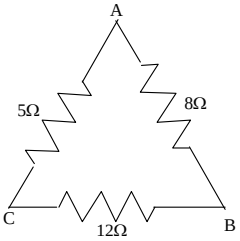
Q.3

a	Deduce the parallel connection of three resistors.	5M	[CO1][PO1]
b	Find the currents and voltages across the resistances for the given network.	5M	[CO1][PO1]

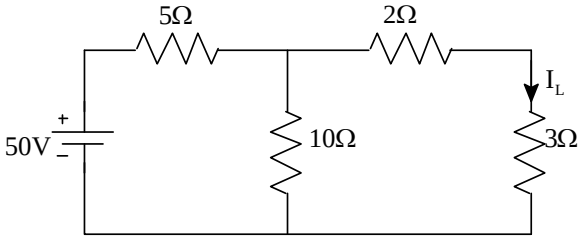


OR

c	Find the equivalent star connected circuit for the given delta connected circuit.	4M	[CO1][PO1]



d	Find the current thorough 3Ω resistance in the given circuit by using Thevenin's theorem.	6M	[CO1][PO1]



Q.4

a	Deduce the sinusoidal excitation for RL series circuit.	7M	[CO2][PO1]
b	Differentiate between single phase and three phase AC circuits.	3M	[CO2][PO1]
	OR		
c	Discuss the hysteresis loss and eddy current loss.	4M	[CO2][PO1]
d	An alternating voltage of RMS value 100V, 50Hz is applied separately across a resistance of 10Ω, an inductor of 100Mh and a capacitor of 100Mf. Calculate the current flow in each case and also draws and explains the Phasor diagrams.	6M	[CO2][PO1]

Q.5

a	Discuss the working principle of DC generator.	5M	[CO3][PO1]
b	Deduce the EMF equation of DC generator.	5M	[CO3][PO1]
	OR		
c	Describe the working principle of transformer.	5M	[CO3][PO1]
d	Deduce the EMF equation of transformer.	5M	[CO3][PO1]

Q.6

a	Explain the working principle of PMMC instruments.	6M	[CO4][PO2]
b	Differentiate between null type and deflecting type instruments.	4M	[CO4][PO2]
	OR		
c	List the applications of Thyristor.	4M	[CO4][PO2]
d	Demonstrate the various types of system of wiring.	6M	[CO4][PO2]