Register Number:……..

KUMARAGURU
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B.TECH. DEGREE EXAMINATIONS: NOV/DEC 2022

(Regulation 2018)

Third Semester

FASHION TECHNOLOGY

U18EEI3206: Basic Electrical and Electronics Engineering

COURSE OUTCOMES

CO1: Acquire basic knowledge on DC and AC circuits.
CO2: Understand the construction, working principle and applications of DC machines
CO3: Understand the construction, working principle and applications of AC machines and transformers.
CO4: Acquire basic knowledge on logic gates, semiconductor devices and their applications.
CO5: Identify electronic components and use them to design simple circuits.

Time: Three Hours **Maximum Marks: 100**

Answer all the Questions:-
PART A (10 x 2 = 20 Marks)
(Answer not more than 40 words)

1.	Define current and resistance.	CO1	[K_1]
2.	State Ohm's law and mention its limitations.	CO1	[K_1]
3.	Define frequency and time period.	CO2	[K_1]
4.	Specify the range of power factor.	CO2	[K_2]
5.	State Faraday's laws of electromagnetic induction.	CO3	[K_2]
6.	List few applications of single phase induction motor.	CO3	[K_2]
7.	Define knee voltage.	CO4	[K_2]
8.	Sketch the symbol of NPN transistor and mark the current directions.	CO4	[K_2]
9.	Convert $(2234)_{10}$ to its binary	CO5	[K_3]
10.	Differentiate de-multiplexer and decoder.	CO5	[K_2]

Answer any FIVE Questions:-
PART B (5 x 16 = 80 Marks)
(Answer not more than 400 words)

11.	a)	Compare series and parallel circuits.	06	CO1	[K_3]
	b)	Obtain the current in each branch of the network shown in figure.1 using mesh current method.	10	CO1	[K_4]

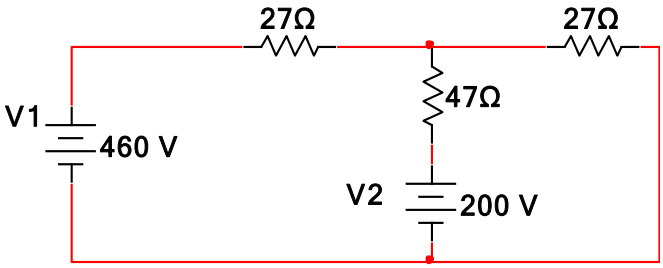

Figure 1

12.	a)	Derive the expression for impedance, power factor and current of a RL series circuit supplied with single phase AC voltage source. Also draw the phasor diagram.	08	CO2	[K_2]
	b)	A resistance of 120 Ω and a capacitive reactance of 250 Ω are connected in series across a A.C voltage source. If a current of 0.9 A is flowing in the circuit, find out (i) Power factor, (ii) Supply voltage (iii) Voltages across resistance and capacitance.	08	CO2	[K_3]
13.	a)	Describe the working of DC generator with relevant diagram.	08	CO3	[K_2]
	b)	Explain the constructional details of a three phase induction motor with relevant diagrams.	08	CO3	[K_2]
14.	a)	With neat circuit and waveform, explain how an alternating voltage is rectified using half-wave rectifier.	08	CO4	[K_3]
	b)	Sketch and explain the drain characteristics of N channel JFET.	08	CO4	[K_2]
15.	a)	Design a full subtractor using logic gates.	08	CO5	[K_6]
	b)	Draw the logic diagram of JK flip flop and explain its operation through its characteristic table and equation.	08	CO5	[K_2]
16.	a)	Design and implement 4 to 1 multiplexer using appropriate gate circuits.	08	CO5	[K_6]
	b)	Show how a Zener diode can be used to regulate the output voltage.	08	CO4	[K_3]

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