PVP 20

Code: 20ES1101

I B.Tech - I Semester – Regular / Supplementary Examinations
FEBRUARY - 2023

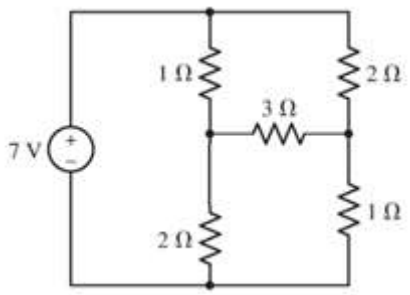
BASIC ELECTRICAL & ELECTRONICS ENGINEERING

(Common for CE, CSE, IT)

Duration: 3 hours Max. Marks: 70

Note: 1. This paper contains questions from 5 units of Syllabus. Each unit carries 14 marks and have an internal choice of Questions.
2. All parts of Question must be answered in one place.

BL – Blooms Level CO – Course Outcome

			BL	CO	Max. Marks
		UNIT-I			
1	a)	Derive the relationship between star and delta connections.	L3	CO2	7 M
	b)	Analyze superposition theorem with suitable example.	L4	CO3	7 M
		OR			
2	a)	Discuss Kirchhoff's voltage and current laws.	L2	CO1	7 M
	b)	Calculate the voltage drop across 3ohm resistor using mesh analysis. 	L3	CO2	7 M

UNIT-II					
3	a)	Derive EMF equation of DC Generator.	L3	CO2	7 M
	b)	Describe the losses that occur in DC Machines.	L2	CO1	7 M
OR					
4	a)	Explain how voltage is buildup in DC Machine.	L2	CO1	7 M
	b)	Categorize DC Generators with relevant diagrams.	L4	CO3	7 M
UNIT-III					
5	a)	Briefly explain performance of transformer with respect to voltage regulation and efficiency.	L4	CO3	7 M
	b)	Discuss in brief construction and principle of three phase induction motor.	L2	CO1	7 M
OR					
6	a)	Establish the condition of maximum efficiency of single-phase transformer in terms of losses.	L3	CO2	7 M
	b)	Interpret open circuit and short circuit test of Transformers.	L3	CO2	7 M
UNIT-IV					
7	a)	Explain different biasing circuits of p-n junction diode.	L2	CO1	7 M
	b)	Illustrate full wave rectifier with relevant waveforms.	L3	CO4	7 M

OR					
8	a)	Explain the working principle of Zener diode.	L2	CO1	7 M
	b)	Interpret working of half wave rectifier with filter capacitor.	L3	CO4	7 M
UNIT-V					
9	a)	Interpret the characteristics of ideal Op-Amp.	L3	CO4	7 M
	b)	Explain the operation of inverting amplifier with open loop configuration.	L2	CO1	7 M
OR					
10	a)	What is Op-Amp? State assumptions made for analyzing ideal Op-Amp.	L4	CO5	7 M
	b)	Derive the expression for closed loop gain of inverting Op-Amp.	L3	CO4	7 M