

CONTINUOUS INTERNAL EVALUATION- 2

Dept:EC	Sem / Div:3 rd ,A&B	Sub:Power Electronics and Instrumentation	S Code:18EC36
Date:03-12-2020	Time: 2:30-4:00 PM	Max Marks:50	Elective:N
Note: Answer any 2 full questions, choosing one full question from each part.			

Q N	Questions	Marks	RBT	COs
PART A				
1 a	Explain the operation of Isolated Forward converter with suitable circuit diagram and waveforms.	9	L2	CO2
b	What are the different types of static errors. Explain each with the measures to avoid them.	8	L2	CO3
c	A single phase Half bridge inverter has a Resistive load of 10 ohm and the dc voltage is 96V. Compute i)RMS value of the output voltage ii) Fundamental component of the output voltage iii) Fundamental power consumed by the load.	8	L3	CO2
OR				
2 a	Explain the operation of single phase half bridge inverter.Draw the load voltage and load current waveforms for R and RL load.	9	L2	CO2
b	Convert a basic D'Arsonval movement with an internal resistance of 50 Ω and a full scale deflection current of 2mA into a multirange dc voltmeter with voltage ranges of 0-10V, 0-50V, 0-100V and 0-250V.	7	L3	CO3
c	With the help of neat circuit diagram and waveforms. Explain the working principle of a step-up chopper. And also obtain an expression for the output voltage.	9	L3	CO2
PART B				
3 a	Explain the operation of single phase Full bridge inverter. Draw the load voltage and load current waveform for R and RL load and also derive the expression for voltage and current.	10	L3	CO2
b	Define the following: 1.Accuracy 2.Precision 3.Absolute error 4.Resolution 5.Sensitivity	6	L2	CO3
c	Explain the operation of Isolated Flyback converter with suitable circuit diagram and waveforms.	9	L2	CO2
OR				
4 a	For step down chopper the dc source voltage is 200V,load resistance is 20Ω.Consider the voltage drop of 4v across chopper when it is ON.For a duty cycle of 0.6 calculate Average and RMS value of output voltage.	9	L3	CO2
b	Explain the control strategies used to operate choppers and also explain the various classification of chopper circuits.	10	L2	CO2
c	A true value of voltage across resistor is 50 V. The instrument reads 49 V. Calculate i) absolute error ii) percentage error iii) relative accuracy iv) percentage accuracy.	6	L2	CO3