CODE No.: 16BT31001 SVEC-16

SREE VIDYANIKETHAN ENGINEERING COLLEGE

(An Autonomous Institution, Affiliated to JNTUA, Ananthapuramu)

II B.Tech I Semester (SVEC-16) Regular/Supplementary Examinations November - 2018

ELECTRICAL AND ELECTRONICS MEASUREMENTS

[Electronics and Instrumentation Engineering]

Time: 3 hours **Max. Marks: 70**

Answer One Question from each Unit
All questions carry equal marks

UNIT-I

1	a)	What is the reason behind the oscillations of the pointer in a PMMC when switch is closed and name some mechanism to reduce the oscillations?	CO1	7 Marks
	b)	Explain about PMMC instrument as an ammeter. How it can be used for AC? Explain in detail.	CO1	7 Marks
		(OR)		
2	a)	Discuss in details the types of errors and their causes in Moving Iron Instrument.	CO2	7 Marks
	b)	Design a multi-range ammeter for the ranges 10mA, 50mA and 75mA using a D'Arsonval movement having an internal coil resistance of 50Ω at a maximum current of 1mA.	CO2	7 Marks

UNIT-II

3	a)	"Using individual VOLTMETER and AMMETER is not an advisable to measure the power delivered to the load". Justify with mathematical expressions.	CO3	7 Marks
	b)	Compare the AC potensiometer with the DC potensiometer.	CO4	7 Marks
		(OR)		
4		Using the Phasor diagram of Single Phase Induction type energy meter derive the expression of electrical energy consumed. List out few errors during the process of energy measurement.	CO3	14 Marks

UNIT-III

5	a)	Wheatstone bridges can't be used for low range of resistances. Justify.	CO4	7 Marks
	b)	Select a suitable bridge to measure low range of resistance, explain its construction and derive the balance condition.	CO5	7 Marks
		(OR)		
6	a)	Derive the general equation for balance of an AC bridge and state the two essential conditions to make AC bridge balance.	CO4	7 Marks
	b)	Discuss the drawbacks of Desauty's bridge and explain how to overcome them with Schering bridge with mathematical support.	CO5	7 Marks

UNIT-IV

7	a)	Draw the basic block diagram of a digital frequency meter and explain in detail.	CO5	7 Marks
	b)	Explain the functioning of Stop and Start gate in the time base selector for the measurement of frequency.	CO5	7 Marks
		(OR)		
8		Describe with the help of neat circuit, the application of digital frequency meter for the following measurements i) Single and Multiple Period measurements. ii) Time interval measurements.	CO3	14 Marks

UNIT-V

9	a)	With a neat sketch, explain the LCD technology.	CO1	7 Marks
	b)	Using block diagram, explain the functioning of Digital Storage Oscilloscope.	CO2	7 Marks

(OR)

10	a)	Write short note on: i) Magnetic tape recorders. ii) CD/DVD recorders.	CO6	7 Marks
	b)	Elaborate why the study of spectrum analysis so important in analyzing signals.	CO6	7 Marks