



B.Tech - Odd Sem : End Semester Exam

Academic Year:2020-2021

18EC3018 - Electronics Instruments & Automation

Set No: 4

Time:		Max.Marks: 100					
S.NO	Answer All Questions	Choice	Options	Marks	CO	CO BTL	COI BTL
1.	Express the secondary standards in instruments and Describe the principle of operation in Thermistor	choice Q-2		10Marks	CO1	2	1
2.	Explain Wheatstone bridge for resistance measurement and Define the terms i) Repeatability ii) Static sensitivity iii)Linearity			10Marks	CO1	2	2
3.	Answer Either 3 or 4	choice Q-4		15Marks	CO1	2	2
3.A.	Discuss about the functional elements of an instrument			7Marks	CO1	2	1
3.B.	Classify the characteristics of transducers			8Marks	CO1	2	2
4.	Answer Either 3 or 4			15Marks	CO1	2	2
4.A.	Explain the dynamic characteristics in instruments and measurements			7Marks	CO1	2	1
4.B.	Interpret the different elements in instrumentation amplifier			8Marks	CO1	2	2
5.	Discuss the construction of series ohmmeter and Recognize the various important components in CRT	choice Q-6		10Marks	CO2	2	1
6.	Write a short note on interfacing buses in electronic instrumentation and Describe the importance of digital capacitance meter in capacitance measurements			10Marks	CO2	2	2
7.	Answer Either 7 or 8	choice Q-8		15Marks	CO2	2	2
7.A.	Demonstrate the measurement of PH with the help of digital PH meter			7Marks	CO2	2	1
7.B.	Illustrate the technique in the measurement of frequency in CRO			8Marks	CO2	2	2
8.	Answer 7 or 8			15Marks	CO2	2	2
8.A.	Describe the working principle of Ultrasonic distance meter			7Marks	CO2	2	1
8.B.	What are the outstanding characteristics of DVM			8Marks	CO2	2	2
9.	Distinguish open loop and closed loop feed back systems and List out different types of compensators	choice Q-10		10Marks	CO3	2	1
10.	List out the functions of a machine vision system and Explain proportional, Integral and derivative control actions			10Marks	CO3	2	2
11.	Answer 11 or 12	choice Q-12		15Marks	CO3	2	2
11.A.	Explain briefly steps for compensator design			7Marks	CO3	2	1
11.B.	Explain frequency response analysis with bode diagram			8Marks	CO3	2	2
12.	Answer Either 11 or 12			15Marks	CO3	2	2

12.A.	Explain the design procedure for lag lead compensator			7Marks	CO3	2	1
12.B.	Discuss different robotic motions			8Marks	CO3	2	2
13.	Explain fixed automation and Elaborate Artificial Intelligence	choice Q-14		10Marks	CO4	2	1
14.	Elaborate the applications of machine vision in manufacturing and Interpret man machine interface			10Marks	CO4	2	2
15.	Answer Either 15 or 16	choice Q-16		15Marks	CO4	2	2
15.A.	Write a Note on Industrial communication systems			7Marks	CO4	2	1
15.B.	Describe the various configurations of robot			8Marks	CO4	2	2
16.	Answer Either 15 or 16			15Marks	CO4	2	2
16.A.	Illustrate the role of IOT in automation			7Marks	CO4	2	1
16.B.	Discuss the operation of pick and place robot			8Marks	CO4	2	2

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