



**B.Tech - Odd Sem : End Semester Exam**  
**Academic Year:2020-2021**  
**18EC3018 - Electronics Instruments & Automation**  
**Set No: 3**

<b>Time:</b>		<b>Max.Marks: 100</b>					
S.NO	Answer All Questions	Choice	Options	Marks	CO	CO BTL	COI BTL
1.	List out the methods for calibration and Discuss the ways to minimize errors in instruments	choice Q-2		10Marks	CO1	2	1
2.	Express the secondary standards in instruments and Describe the principle of operation in Thermistor			10Marks	CO1	2	2
3.	Answer Either 3 or 4	choice Q-4		15Marks	CO1	2	2
3.A.	Explain the measurement of inductance using bridges			7Marks	CO1	2	1
3.B.	Explain the following with example i) Accuracy ii) Precision iii) Resolution			8Marks	CO1	2	2
4.	Answer Either 3 or 4			15Marks	CO1	2	2
4.A.	Construct the instrumentation amplifier and explain briefly			7Marks	CO1	2	1
4.B.	Describe the construction and working of RTD			8Marks	CO1	2	2
5.	Represent the working of digital thermometer and Demonstrate the measurement of PH with the help of digital PH meter	choice Q-6		10Marks	CO2	2	1
6.	Discuss the construction of series ohmmeter and Recognize the various important components in CRT			10Marks	CO2	2	2
7.	Answer Either 7 or 8	choice Q-8		15Marks	CO2	2	2
7.A.	Write a short note on interfacing buses in electronic instrumentation			7Marks	CO2	2	1
7.B.	List out merits and demerits of digital thermometers			8Marks	CO2	2	2
8.	Answer Either 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.	Outline the block diagram of feedback control system, open loop control system and Paraphrase the machine vision	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 Either 11 or 12	choice Q-12		15Marks	CO3	2	2
11.A.	Describe with an example compensator design with bododiagram			7Marks	CO3	2	1
11.B.	Describe the various configurations of robot			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.	List out the reasons for automation and Write a note on process control valves	choice Q-14		10Marks	CO4	2	1
14.	Write a note on Actuators and Explain flexible automation			10Marks	CO4	2	2
15.	Answer Either 15 or 16	choice Q-16		15Marks	CO4	2	2
15.A.	Describe different data transfer techniques			7Marks	CO4	2	1
15.B.	Write a note on welding robots			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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