Sanjay Ghodawat University, Kolhapur

2018-19

Established as State Private University under Govt. of Maharashtra. Act No XL, 2017

FY M Tech	School of Technology	Semester II
ELE 504	SCADA system and Applications	Max Marks: 100
May 2019	End Semester Examination (ESE)	Time: 3 Hrs

22ⁿᵈ may 2019 wedsday

2:30 pm to 5:30 pm

Instructions for Students: 1) Use of non-programmable calculator is allowed

2) All questions are compulsory

Q1		Solve any Two	Marks	COs	Level
	a)	Explain the Benefits of Programmable Logic Controllers over Microcontrollers in control of real time processes.	09	CO1	L6
	b)	Elaborate the application of SCADA systems in control of Water reservoirs.	09	CO3	L4
	c)	With relevant diagram, Discuss the architecture of LAN/Ethernet communication.	09	CO1	L4
Q2					
	a)	Explain Sourcing and Sinking methods of Energizing PLCs	04	CO1	L4
	b)	Define SCADA, Explain the architecture of SCADA in detail	12	CO2	L4
		OR			
	b)	With a neat diagram, explain SCADA application in Petroleum industries.	12	CO3	L5
Q3	a)	Explain any four techniques of securing SCADA systems from IT Threats.	04	CO2	L4
	b)	Using Ladder programming, Verify the following logic gates: a. AND gate b. OR gate c. NAND gate d. NOR gate	12	CO3	L3

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Q4		Solve any Two	Marks	COs	
	a)	Evaluate the application of SCADA in Water purification plants.	09	CO3	L5
	b)	Using suitable programming example, Discuss the application of ON Time delay timer in detail	09	CO1	L6
	c)	Discuss TCP/IP model of SCADA communication in detail.	09	CO2	L4
Q5					
	a)	Discuss the syntax rules for ladder programming in detail.	04	CO3	L4
	b)	Explain the need for SCADA software documentation. OR	12	CO2	L4
	b)	Elaborate the application of SCADA in Thermal electric power plants.	12	CO1	L6
Q6	a)	Define the following terms: a. Hotstandby b. DataHighway Plus c. fieldbus d. RTOS	04	CO1	L5
	b)	Using Suitable diagram, Explain application of SCADA for control of cranes in industries.	12	CO3	L6

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