Question Paper

Exam Date & Time: 05-Jan-2023 (02:30 PM - 05:30 PM)

MANIPAL ACADEMY OF HIGHER EDUCATION

SEVENTH SEMESTER B.TECH MAKE UP EXAMINATIONS, JANUARY 2023

Smart Sensor [ICE 4058]

Marks: 50 **Duration: 180 mins.**

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Answer all the questions.

Instructions to Candidates: Answer ALL questions Missing data may be suitably assumed

1)		With necessary diagram explain the working of following I) Industrial process control loop. II) Smart sensor model. [CO1, PO1,2,3,4 BL2]	(5)
	A)		
	B)	With a block diagram explain the working of a Generic control system. [CO4, PO1,4,5, BL3]	(2)
	C)	What is classification? Explain different classification techniques. [CO4, PO1,4,5, BL2]	(3)
2)		Describe the different components of Object model for IEEE 1451.1 standard with its diagram. [CO2, PO1,2,3,4,5, BL2]	(5)
	A)		
	B)	Draw the diagram of reference implementation of IEEE 1451 standard. [CO2, PO1,4,5, BL3]	(2)
	C)	With its diagram illustrate the characteristics of surface acoustical devices. [CO3, PO1,2,3,4,5, BL3]	(3)
3)		Explain the various protocols used in RF signal transmission. [CO3, PO1,2,3,4,5, BL2]	(4)
	A)		
	B)	Analyse network communication models used in IEEE 1451.1 standard. [CO2, PO1,2,3,4,5, BL4]	(3)
	C)	With the block diagram explain the working of Intelligent wireless sensor standard. [CO2, PO1,2,3,4,5, BL3]	(3)
4)		Explain the future trend of internet software for smart sensor with its diagram. [CO2, PO1,2,3,4,5, BL2]	(4)
	A)		
	B)	Discuss the working of remote sensing system with its diagram. [CO3, PO1,2,3,4,5, BL3]	(2)
	C)	Answer following questions I) Interpret the various communication protocols that are used in smart home automation system. II) Specify the characteristics that is required for a sensor used in IoT. [CO5, PO1,5, BL2]	(4)
5)		Explain how a distributed system interface can be used for automotive air bag system. [CO2, PO1,2,3,4,5, BL2]	(5)
	A)		
	B)	What is Nano sensor? How would you interpret the different preparation methods used for nano sensor. [CO5, PO1,5, BL3]	(2)
	C)	Explain the working and appllication of Low frequency RFID and High frequency RFID. [CO5, PO1,5, BL2]	(3)

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