

MCA.III/01.22.001

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MCA DEGREE THIRD SEMESTER EXAMINATION, JANUARY 2022

20-382-0323 INTERNET OF THINGS

(Regular)

Time : 3 Hours

Maximum Marks :50

No	QUESTIONS	MARKS	CO	BL	PL
1.	(a) Define IoT.	2	CO1	L2	2.6.2
	(b) What are the components required to design an IoT Device?	4			
	(c) Briefly explain the components.	4			
2.	(a) What is Machine to Machine (M2M) communication?	4	COI	L2	2.6.2
	(b) Compare M2M and IoT.	6			2.6.4
3.	Design a Raspberry Pi based vehicle monitoring and tracking system which should collect information regarding vehicle location, speed, fuel level, acceleration of the vehicle, engine temperature, etc., and send this information at regular interval in real time to a cloud server database. This vehicle statistics stored in the cloud database should be accessible by authorized persons using any web enabled device.				
	(a) Identify the sensors required and explain the tasks that should be executed by the system.	5	CO5	L4	1.6.1
	(b) Draw the block diagram showing sensors and interface.	3			
	(c) Write the Pseudo code for implementing the system.	2			
4.	Design an IoT based hand sanitizer dispenser after measuring the temperature when an object is placed within the set range.				
	(a) List the components required for the system.	3	CO4	L4	1.6.1
	(b) Draw the circuit diagram for the system.	3			
	(c) Write the program for automating the functionalities.	4			

5.	(a)	What is ZigBee Architecture?	5	CO3	L3	2.5.3
	(b)	Explain the role of ZigBee in IoT communication.	5			
6.	(a)	With a neat diagram explain the 4-layer architecture of IoT.	6	CO2	L2	2.6.3
	(b)	What is sensor fusion? Give an example for sensor fusion	4			
7.	(a)	Explain the role of Big Data Analytics in IoT.	5	CO5	L3	2.5.3
	(b)	Consider an IoT based forest fire detection system, Draw the architecture, and explain the bigdata processing steps in this use case.	5			
