ETC145

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RAMAIAH Institute of Technology

(Autonomous Institute, Affiliated to VTU)
(Approved by AICTE, New Delhi & Govt. of Karnataka)
Accredited by NBA & NAAC with 'A+' Grade

MAKE UP EXAMINATIONS – JULY 2023

Program	:	**B.E. – Common to ECE / EEE / EIE /ETE / MLE / ME / IEM / CH**	**Semester**	:	**I**
Course Name	:	**Introduction to Internet of Things (IoT)**	**Max. Marks**	:	**100**
Course Code	:	**ETC145**	**Duration**	:	**3 Hrs**

Instructions to the Candidates:

- Answer one full question from each unit.

UNIT - I

1.	a)	Differentiate between Internet of Things (IoT) and Machine-to-Machine (M2M) communication.	CO1	(06)
	b)	List the IoT networking components and explain their role in an IoT network.	CO1	(06)
	c)	Explain the functionality of network layers in the TCP/IP reference model with diagram.	CO1	(08)
2.	a)	Differentiate between Internet of Things (IoT) and Web of Things (WoT) paradigms.	CO1	(06)
	b)	Discuss the evolution of IoT with diagram.	CO1	(06)
	c)	Discuss the role of IoT in agriculture with any two example scenarios.	CO1	(08)

UNIT - II

3.	a)	Differentiate between transducer, sensor, and actuator.	CO2	(05)
	b)	Differentiate between offset error and drift.	CO2	(05)
	c)	The more the resolution of a sensor, the more accurate is the precision. Justify.	CO2	(05)
	d)	List out the actuator types and explain any four in brief.	CO2	(05)
4.	a)	With a suitable diagram explain the functional blocks of a Typical Sensor Node in IoT.	CO2	(08)
	b)	List out the Classification of sensors based on property being measured and explain them in brief.	CO2	(06)
	c)	Identify the actuator type to which motors belong and explain the characteristics of this actuator type.	CO2	(06)

UNIT - III

5.	a)	Describe importance of processing in IoT.	CO3	(05)
	b)	With a suitable example illustrate event detection using an off-site processing topology.	CO3	(05)
	c)	Differentiate between structured and unstructured data.	CO3	(05)
	d)	What factors are to be considered while deciding on the data offload location?	CO3	(05)
6.	a)	What are the critical factors to be considered during the design of IoT devices?	CO3	(05)
	b)	List the differences between collaborative processing and remote processing?	CO3	(05)
	c)	Mention the various data generating sources and storage sources connected tothe internet with suitable examples.	CO3	(05)

	d)	Illustrate the pros and cons of on-site and off-site processing.	CO3	(05)

UNIT- IV

7.	a)	Explain the use of Fog Computing in agriculture, with diagram.	CO4	(06)
	b)	List out and describe the popular cloud simulation platforms with their features.	CO4	(06)
	c)	Illustrate the role of IoT in smart irrigation management system with diagram.	CO4	(08)
8.	a)	Explain the concept of Sensors as a Service (SaaS) with a case study.	CO4	(06)
	b)	Discuss the difference in functionality of various service models available on cloud platforms.	CO4	(06)
	c)	Explain the concept of virtualization, and its advantages for end user and service provider.	CO4	(08)

UNIT - V

9.	a)	Explain the Architecture of Fog-FISVER in detail with a block diagram.	CO5	(08)
	b)	Explain in detail about the components used in vehicular IoT.	CO5	(06)
	c)	Elaborate on the advantages and risks associated with healthcare IoT systems.	CO5	(06)
10.	a)	Using suitable examples differentiate between various types of Machine learning.	CO5	(08)
	b)	Cloud computing is important for a healthcare IoT system. Justify with proper reasons.	CO5	(06)
	c)	What are the applications of IoT in transportation?	CO5	(06)

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