Code No: **R204105T** **R20** **Set No. 1**

IV B.Tech I Semester Regular Examinations, January – 2024

INTRODUCTION TO INTERNET OF THINGS

(OE-III: CE, EEE, ME, ECE, AME, MM, AGE, CSE-CS, CSE-IOTCSIBCT, CSE- IOT, FE, PHARM & CS)

Time: 3 hours **Max. Marks: 70**

Answer any FIVE Questions
ONE Question from Each unit
All Questions Carry Equal Marks

*****

UNIT - I

1	a)	Explain the CISCO seven level reference model architectural view for IoT.	[7]
	b)	List the characteristics, range, data transfer rates, three operational modes and two communication modes of NFC communication.	[7]
		(OR)	
2	a)	Define Wireless Sensor Network and list its applications.	[7]
	b)	What is an Application Layer? How does FTP work? Mention its advantages and disadvantages.	[7]

UNIT– II

3	a)	How does the Bluetooth layer provide confidentiality and authorisation? Explain.	[7]
	b)	Discuss the key resources in Internet of Streetlight.	[7]
		(OR)	
4		With neat sketch explain various nine building blocks of a business model canvas.	[14]

UNIT - III

5	a)	Explain in detail about design principles for the web connectivity for connected-devices.	[7]
	b)	List comparisons between CoAP-MQ and MQTT features.	[7]
		(OR)	
6	a)	List and explain the properties of constrained environments.	[7]
	b)	Explain the structure of SOAP message.	[7]

UNIT - IV

7	a)	Discuss in detail Data Generation and Data Acquisition.	[7]
	b)	What do you mean by data store? Explain the different schemas for a data Store.	[7]
		(OR)	
8	a)	How do you organise data in IoT? Explain.	[7]
	b)	Explain about integration of an enterprise systems.	[7]

UNIT - V

9	a)	List and explain the cloud computing features and advantages.	[7]
	b)	Explain the Radio Frequency Identification (RFID) technology.	[7]
		(OR)	
10	a)	Describe the uses of wireless sensor network technology.	[7]
	b)	Explain about IoT cloud based services using Xively (Pachube/COSM).	[7]

Code No: **R204105T** **R20** **Set No. 2**

IV B.Tech I Semester Regular Examinations, January – 2024

INTRODUCTION TO INTERNET OF THINGS

(OE-III: CE, EEE, ME, ECE, AME, MM, AGE, CSE-CS, CSE-IOTCSIBCT, CSE- IOT, FE, PHARM & CS)

Time: 3 hours **Max. Marks: 70**

Answer any FIVE Questions
ONE Question from Each unit
All Questions Carry Equal Marks

*****

UNIT - I

1	a)	Draw and Explain the data communication diagram for a smart watch.	[7]
	b)	Explain about the Internet connectivity with the help of an example.	[7]
		(OR)	
2	a)	Explain the oracle reference model architectural view for IoT.	[7]
	b)	Compare and contrast HTTP & HTTPS.	[7]

UNIT - II

3		List the various differences between NFC, BT LE, ZigBee and WLAN protocols.	[14]
		(OR)	
4	a)	Describe various data management and consolidation functions.	[7]
	b)	Draw and explain the ITU-T reference model for internet of streetlights.	[7]

UNIT - III

5	a)	Write a detailed note on Constrained Application Protocol.	[7]
	b)	With neat sketch explain data bidirectional communication using WebSocket APIs.	[7]
		(OR)	
6	a)	Discuss the Extensible Messaging and Presence Protocol (XAMPP)	[7]
	b)	Write about the REST and RESTful HTTP Web Applications	[7]

UNIT - IV

7	a)	Write in detailed note on Data Validation.	[7]
	b)	Explain in detail about Database Management System.	[7]
		(OR)	
8	a)	Describe Data Categorisation for Storage in detail.	[7]
	b)	Discuss Consistency Availability and Partition-Tolerance Theorem.	[7]

UNIT - V

9		Explain various cloud deployment models in detail.	[14]
		(OR)	
10	a)	What is a smart sensor? Discuss the capabilities of a smart sensor.	[7]
	b)	List and explain the merits of participatory sensing.	[7]

Code No: **R204105T** **R20** **Set No. 3**

IV B.Tech I Semester Regular Examinations, January – 2024

INTRODUCTION TO INTERNET OF THINGS

(OE-III: CE, EEE, ME, ECE, AME, MM, AGE, CSE-CS, CSE-IOTCSIBCT, CSE- IOT, FE, PHARM & CS)

Time: 3 hours **Max. Marks: 70**

Answer any FIVE Questions
ONE Question from Each unit
All Questions Carry Equal Marks

*****

UNIT - I

1	a)	Give examples of IoTs used in a smart home with sensors, actuators and smart home automation software.	[7]
	b)	List out the differences between HTTP and FTP.	[7]
		(OR)	
2	a)	How do the CISCO reference model and Oracle reference architecture? Correlate in an IoT architecture? Explain.	[7]
	b)	Write in detailed note on Constrained Application Protocol.	[7]
		UNIT - II	
3	a)	Write in detailed note on Device-management Gateway.	[7]
	b)	Discuss the architectural layers in a modified OSI model for Internet of smart streetlights application.	[7]
		(OR)	
4	a)	What do you mean by‘ease’ and ‘affordability’? Explain.	[7]
	b)	Describe the domains and their service capabilities in ETSI high-level architecture for applications and services.	[7]
		UNIT - III	
5	a)	Explain CoAP Client Web Connectivity in detail.	[7]
	b)	Discuss Message Queuing Telemetry Transport (MQTT) open-source protocol.	[7]
		(OR)	
6	a)	Discuss the Lightweight Machine-to-Machine Communication Protocol.	[7]
	b)	Explain data exchanges between HTTP Web-Objects in detail.	[7]
		UNIT - IV	
7	a)	Describe data store and data centre management in detail.	[7]
	b)	What does data acquisition mean? List the benefits of data acquisition.	[7]
		(OR)	
8	a)	List and explain the different types of data which is generated at the devices.	[7]
	b)	Explain the essential features of distributed databases.	[7]
		UNIT - V	
9	a)	Compare and contrast four cloud-deployment models.	[7]
	b)	List the merits of deploying instances of server at the IoT device nodes or networks during cloud computing.	[7]
		(OR)	
10		Discuss in detail IoT cloud-based data collection, storage and computing services using Nimbits.	[14]

Code No: **R204105T** **R20** **Set No. 4**

IV B.Tech I Semester Regular Examinations, January – 2024

INTRODUCTION TO INTERNET OF THINGS

(OE-III: CE, EEE, ME, ECE, AME, MM, AGE, CSE-CS, CSE-IOTCSIBCT, CSE- IOT, FE, PHARM & CS)

Time: 3 hours **Max. Marks: 70**

Answer any FIVE Questions
ONE Question from Each unit
All Questions Carry Equal Marks

*****

UNIT - I

1	a)	List and explain the sources of IoT development board which can be used for prototype development.	[7]
	b)	Discuss about HTTP Request and Response Method.	[7]
		(OR)	
2		Explain the role of four-layers in a smart city architectural framework.	[14]
		UNIT - II	
3		Describe the architectural layers in ITU-T reference model for Internet of RFIDs application.	[14]
		(OR)	
4	a)	List and explain the benefits provided by a business model.	[7]
	b)	Describe in detail business-model innovation.	[7]
		UNIT - III	
5	a)	Explain the functions of MQTT broker.	[7]
	b)	List the various features of CoAP.	[7]
		(OR)	
6	a)	List and explain the functions of resource directory service by RD when using at the CoAP-MQ protocol.	[7]
	b)	Draw and Explain data flow diagram showing the use of XAMPP protocol for connected ATMs and bank server web objects.	[7]
		UNIT - IV	
7	a)	Describe about IoT/M2M Data Acquiring and storage.	[7]
	b)	Write a note on Online Transactions and Processing.	[7]
		(OR)	
8	a)	List the applications of IoT/M2M.	[7]
	b)	With neat sketch describe architecture reference model for the business intelligence and business processes.	[7]
		UNIT - V	
9	a)	How do you define cloud computing? How does it differ from distributed computing? Explain.	[7]
	b)	Explain IoT Cloud-based Data Collection, Storage, Computing using Xively	[7]
		(OR)	
10		Describe in detail four cloud service models.	[14]