b.i.	Compare and contrast the advantages and disadvantages of using RFID technology versus NFC technology.	6	3	3	2
ii.	What are the factors that make NFC a better alternative to RFID in certain application areas?	6	3	3	2
31. a.	Evaluate the differences between TCP, MPTCP and UDP.	12	3	4	2
	(OR)				
b.	Assess the similarities and differences between XMPP and AMQP service layer protocols.	12	3	4	2
32. a.	What are the key concepts of AWS IoT? Explain the role of AWS IoT in the content of the Internet of Things (IoT).	12	3	5	2
	(OR)				
b.	What are the steps for connecting a device to AWS IoT?	12	3	5	2

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Reg. No.															

B.Tech. DEGREE EXAMINATION, JUNE 2023

Sixth Semester

18CSE322T – INTERNET OF THINGS, ARCHITECTURE AND PROTOCOLS

(For the candidates admitted during the academic year 2018-2019 to 2021-2022)

Note:

(i) **Part - A** should be answered in OMR sheet within first 40 minutes and OMR sheet should be handed over to hall invigilator at the end of 40th minute.

(ii) **Part - B & Part - C** should be answered in answer booklet.

Time: 3 hours Max. Marks: 100

PART – A (20 × 1 = 20 Marks)

Answer **ALL** Questions

		Marks	BL	CO	PO
1.	What is the main purpose of basic device in the internet of things? (A) To collect and transmit data (B) To store and process data (C) To provide a secure connection (D) To provide an interface between different networks	1	1	1	1
2.	The main purpose of a domain model in IoT is (A) To define the structure of the data (B) To define the communication protocols (C) To define the physical components (D) To define the system architecture	1	1	1	1
3.	What type of model is used to define the physical components of an IoT system? (A) Domain model (B) Information model (C) Functional model (D) Communication model	1	1	1	1
4.	What is the most important element of an IoT security model? (A) Authentication (B) Encryption (C) Access control (D) Authorization	1	1	1	1
5.	_____ is the primary goal of a privacy policy in IoT. (A) To ensure privacy of personal data (B) To protect against malicious attacks (C) To provide access control to devices (D) To guarantee secure data transmission	1	1	2	1
6.	The first step in managing data from IoT devices is (A) Collecting data from IoT devices (B) Analyzing data from IoT devices (C) Storing data from IoT devices (D) Visualizing data from IoT devices	1	1	2	1
7.	What is the purpose of data validation? (A) To ensure data is accurate (B) To ensure data is consistent (C) To ensure data is secure (D) To ensure data is organized	1	1	2	1

8.	What is XaaS?	1	1	2	1
	(A) Everything as a service (B) Extensible as a service				
	(C) Exchange as a service (D) Expand as a service				
9.	What is the maximum data rate of wireless HART?	1	1	3	1
	(A) 250 kbps (B) 500 kbps				
	(C) 1 Mbps (D) 2 Mbps				
10.	What is the name of the protocol used in DASH7?	1	1	3	1
	(A) LoRa (B) Bluetooth				
	(C) Zigbee (D) DASH alliance protocol (D7A)				
11.	Give the full form or RFID?	1	1	3	1
	(A) Radio frequency identifier (B) Radio frequency identification				
	(C) Radio frequency identification device (D) Radio frequency identifier data				
12.	Specify the range of NFC?	1	1	3	1
	(A) 10 cm (B) 20 cm				
	(C) 30 cm (D) 50 cm				
13.	Name the primary protocol used in the internet	1	1	4	1
	(A) HTTP (B) FTP				
	(C) TCP/IP (D) IP				
14.	State the main purpose of the Internet Protocol (IP)?	1	1	4	1
	(A) To provide a secure communications between two or more computers (B) To facilitate communication between two or more computers				
	(C) To provide a reliable way to transfer data between two or more computers (D) To provide a way to access the world wide web				
15.	UDP is _____.	1	1	4	1
	(A) User datagram protocol (B) Uniform datagram protocol				
	(C) Unreliable datagram protocol (D) Universal data protocol				
16.	The main purpose of using DCCP in transport layer is _____.	1	1	4	1
	(A) To provide reliable, connection oriented data transfer (B) To provide congestion control				
	(C) To provide non reliable, connectionless data transfer (D) To provide secure data transfer				
17.	_____ is the AWS IoT core service endpoint for sending messages to the AWS IoT core service.	1	1	5	1
	(A) iot.us_west-2.amazonaws.com (B) iot.amazonaws.com				
	(C) iot.en_west-1.amazonaws.com (D) iot.ap_southeast-2.amazonaws.com				
18.	What service is required to connect to the AWS IoT core service end point?	1	1	5	1
	(A) Amazon SNS (B) Amazon SQS				
	(C) Amazon MQ (D) Amazon kinesis				

19.	What are the benefits of using AWS IoT?	1	1	5	1
	(A) Lower cost of ownership (B) Scalable and secure				
	(C) Easy integration with other cloud services (D) All the above				
20.	What type of encryption does AWS IoT core use for communication?	1	1	5	1
	(A) TLS (B) SSl				
	(C) AES (D) All of the above				

PART – B (5 × 4 = 20 Marks) Marks BL CO PO
Answer **ANY FIVE** Questions

21.	How does M2M and IoT relate to one another and what is the transition between them?	4	2	1	2
22.	What are the main design principles and capabilities needed to build an architecture of IoT?	4	2	1	2
23.	How can data management help improve business processes?	4	2	2	2
24.	How does wireless HART help to reduce energy consumption?	4	2	2	2
25.	Compare the advantages and disadvantages of wireless sensor networks with traditional wired networks.	4	2	3	2
26.	Compare the features of TLS and DTLS protocols used for secure communication.	4	2	4	2
27.	How AWS CLI can be used to connect with AWS IoT core?	4	2	5	1

PART – C (5 × 12 = 60 Marks) Marks BL CO PO
Answer **ALL** Questions

28. a.	What are the key differences between M2M and IoT and how can they be leveraged to build an effective architecture?	12	3	1	2
	(OR)				
b.	What are the main design principles and capabilities required for developing an IoT architecture?	12	3	1	2
29. a.	Analyze the methods used in managing machine-to-machine data generation.	12	3	2	2
	(OR)				
b.	Write the differences between the IEEE 802.11 and IEEE 802.15 wireless protocol standards.	12	3	2	2
30. a.	Critique the potential security risks associated with using NFC technology in comparison to RFID technology.	12	3	3	2
	(OR)				