G-3/375/22

Roll No. ....

III Semester Examination, January 2022

M.Sc.

INFORMATION TECHNOLOGY

Paper V

(Internet of Things)

Time : 3 Hours]   [Max. Marks : 100

Note : *All questions are compulsory. Question Paper comprises of 3 Sections. Section A is objective type/multiple choice questions with no internal choice. Section B is short answer type with internal choice. Section C is long answer type with internal choice.*

SECTION A   1×10=10

(Objective Type/Multiple Choice Questions)

Choose the correct answer :

1. Which of the following is not involved in working of IOT ?

   (a) RFID   (b) Sensor

   (c) Server   (d) Nano technology

2. Collect –> Communicate –> .... –> Act.

   (a) Analyze   (b) Rectify

   (c) Acknowledge   (d) Examine   P.T.O.

3. Lightweight protocol is :

   (a) CoAP   (b) HTTP

   (c) MQTT   (d) SPI

4. BAN gives :

   (a) Storage

   (b) Communication

   (c) Communication and storage

   (d) Network connectivity

5. Which of the following is the brainchild of ARM ?

   (a) WiFi   (b) Bluetooth

   (c) Thread   (d) Zigbee

6. Data in network layer is transferred in the for of :

   (a) Packets   (b) Layers

   (c) Bytes   (d) Bits

7. IP is connectionless.

   (a) True   (b) False

8. Terms SSL and TLS stand for :

   (a) Secure socket layout and transport layer session

   (b) Session socket layers and Transport layer session

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(c) Secure socket layers and Transport layer security

(d) Secure socket layers and Transport layer session

9. Security based connection is provided by which layer ?

(a) Session layer   (b) Application layer

(c) Network layer   (d) Transport layer

10. Ubiquitons service provision depends on :

(a) Management   (b) QoS

(c) Interoperability   (d) Routing

SECTION B   6×5=30

(Short Answer Type Questions)

Note : *Answer the following questions in **250** words.*

Unit-I

1. What is IoT ? Discuss architectural overview of IoT with neat diagram ?

Or

Briefly discuss genesis of IoT with evolutionary phase of the Internet.

Unit-II

2. Explain real world design constraints model in IoT.

Or

Discuss data representation and visualization with suitable example.

Unit-III

3. Explain MQTT protocol for IoT.

Or

How might wireless communications have an effect on the development and implementation of IoT ? Explain.

Unit-IV

4. Explain features and operation of AMQP in IoT.

Or

Explain requirement of IoT protocol standardization.

Unit-V

5. Write short note on MAC 802.15.4 ?

Or

How security is an essential feature at service layer ? Explain.

SECTION C   12×5=60

(Long Answer Type Questions)

Note : *Answer the following questions in **500** words.*

Unit-I

1. Explain the potential and benefits of an IoT oriented approach over M2M by considering a Helth band as the real-world use case example. Compare the main characteristics of M2M and IoT ?

Or

What effect will the IoT have in healthcare ? Explain with any *one* example of smart device.

Unit-II

2. Discuss IoT functional view with diagram.

Or

Explain the deployment and operational view resources, services, virtual entities, users in an IoT system by considering a parking IoT example.

Unit-III

3. Write short note on HART, Z-wave Bluetooth law energy.

Or

Discuss network layer protocols with IoT scenario.

Unit-IV

4. Briefly explain about transport layer security (TLS) with its architecture and applications.

Or

What is SCTP ? Write its features and also explain SCTP multi-homing communication for IoT with suitable example.

Unit-V

5. Explain ETSI M2M service capabilities in detail with diagram.

Or

Elaborate Routing protocol for low-power and Lossy Networks (RPL) ?

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