19CTU35

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION MAY 2022
(Sixth Semester)

Branch – **COMPUTER TECHNOLOGY**

INTERNET OF THINGS

Time: Three Hours Maximum: 75 Marks

SECTION-A (10 Marks)
Answer **ALL** questions
ALL questions carry **EQUAL** marks (10 x 1 = 10)

1. Which of the following is not an advantage of IoT?
   (i)Improved Customer Engagement (ii) Security
   (iii)Reduced Waste (iv) Enhanced Data Collection

2. What does IANA stands for?
   (i)Internal Assessment Numerical Access
   (ii) Internet Association Numbers Authority
   (iii)International Aid for Network Automation
   (iv)Internet Assigned Numbers Authority

3. MQTT stands for_____
   (i)Multi-Queue Telemetry Things
   (ii)Multiple Queue Telemetry Things
   (iii)Message Queue Telemetry Things
   (iv)Message Queue Telemetry Transport

4. Which statement is TRUE with respect to 802.15.4 standard?
   (i)It is low data rate standard
   (ii)Used for architecting wireless PAN's
   (iii)Uses ONLY two layers - PHY & MAC
   (iv)All the above

5. Which of the following layers provides end-to-end communication in IoT?
   (i)Logical layer (ii) Data link layer
   (iii)Transport layer (iv) Session layer

6. What is the Arduino UNO?
   (i)Software (ii) Hardware device
   (iii)Network (iv) Protocol

7. Raspberry Pi consists of a _____ quad-core processor or microprocessor.
   (i)6-bit (ii)32-bit
   (iii)64-bit (iv)128-bit

8. Which of the below require edge analytics?
   (i)IoT (ii) Big data and IoT
   (iii)Device Data (iv) Big data

9. Which category could be used by citizens to contribute to a smart city?
   (i)Personal IoT (ii) Group IoT
   (iii)Community IoT (iv) Industrial IoT

10. Which of the following is not an application of IoT?
    (i)Wearables (ii)Smart Grid
    (iii)Arduino (iv)Smart City

Cont...

SECTION - B (25 Marks)

Answer **ALL** questions
ALL questions carry **EQUAL** Marks (5 x 5 = 25)

11. a) Explain the elements of one M2M IoT architecture.

(OR)

b) Describe the challenges of IoT?

12. a) Classify the constrained devices and constrained node networks.

(OR)

b) Compare CoAP and MQTT.

13. a) Describe the Embedded computing logic in Microcontroller.

(OR)

b) Illustrate the building blocks of IoT systems.

14. a) Compare i) Structured Vs Unstructured data ii) Data in motion Vs Data in rest

(OR)

b) Explain Network Analytics in IoT.

15. a) Explain the Converged Plantwide Ethernet Model (CPwE).

(OR)

b) Describe GridBlocks Reference model with a neat diagram.

SECTION -C (40 Marks)

Answer **ALL** questions
ALL questions carry **EQUAL** Marks (5 x 8 = 40)

16. a) Discuss about the IOT World Forum (IoTWF) standardized architecture.

(OR)

b) Outline the functional blocks of an IoT ecosystem.

17. a) Elucidate Zigbee protocol stack using IEEE 802.15.4.

(OR)

b) With a neat diagram, explain the 6LoWPAN protocol header.

18. a) Discuss the different pins and parts of Arduino board.

(OR)

b) Write a program to record the current room temperature using Raspberry Pi.

19. a) Elucidate the elements of Hadoop with a neat diagram.

(OR)

b) Outline the System Management with NETCONF – YANG.

20. a) Discuss about the different layers of IoT Smart city layered architecture.

(OR)

b) Summarize about the Smart parking architecture with its advantages and disadvantages.

Z-Z-Z END