Reg. No. : | E | N | G | G | T | R | E | E | . | C | O | M |

Question Paper Code : 30293

B.E./B.Tech. DEGREE EXAMINATIONS, APRIL/MAY 2023

Fourth Semester

Electronics and Instrumentation Engineering

OCS 352 – IoT CONCEPTS AND APPLICATIONS

(Regulations 2021)

Time : Three hours   Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What are the three layers of IoT architecture?

2. What is the purpose of IoT communication model?

3. What are the fundamental components in an IoT system?

4. What are smart objects?

5. How is RFID useful?

6. What are the types of cloud computing?

7. What are the interfaces in IoT devices?

8. What is the use of a Raspberry Pi?

9. Is Alexa an IoT device?

10. List few most common IoT applications in real life.

PART B — (5 × 13 = 65 marks)

11. (a) (i) Highlight the salient features of an M2M architecture with diagrams. (7)

    (ii) What is fog computing? What are the advantages of using it with IoT? Explain. (6)

Or

    (b) (i) What is IoT world Forum Architecture? What is its impact on IoT? Explain. (8)

    (ii) Discuss in brief about the functions of a core IoT functional stack. (5)

12. (a) Explain in brief about the working of any four datalink layer IoT communication protocols. (13)

Or

(b) With a neat block diagram, explain the functions of various units in an IoT ecosystem. (13)

13. (a) With an architectural diagram, explain the working of MQTT protocol. (13)

Or

(b) (i) Explain the role of Big data in IoT. (7)

(ii) How is an Embedded System Used in IoT? Explain with an example. (6)

14. (a) What are GPIO pins? With an example and diagram, explain how signal transmission takes place with GPIO pins. (13)

Or

(b) What is Arduino cloud? Explain its working. (13)

15. (a) (i) What is Industrial IoT? Explain its functions. (6)

(ii) Discuss in brief about how IoT can be used in home automation. (7)

Or

(b) With a real life example, explain how IoT can be used in healthcare. (13)

PART C — (1 × 15 = 15 marks)

16. (a) With a neat block diagram, explain the functions of different layers in an IoT architecture and its usefulness in Smart agriculture. (15)

Or

(b) With an example, explain how IoT is useful for autonomous vehicles. (15)

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