

Reg. No. :

Question Paper Code : 40383

M.E./M.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2018.

Second Semester

Applied Electronics

CP 5292 – INTERNET OF THINGS

(Common to : M.E. Biometrics and Cyber Security/M.E. Communication Systems/M.E. Communication and Networking/M.E. Computer Science and Engineering/M.E. Computer Science and Engineering (With Specialization in Networks)/M.E. Mechatronics Engineering/M.E. Mobile and Pervasive Computing/M.E. Multimedia Technology/M.E. Software Engineering/M.Tech. Information Technology)

(Regulations 2017)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What are the characteristics of IoT?
2. What is the need for IoT systems management?
3. What is OGC?
4. What is IoT domain model?
5. What is ModBus used for?
6. Define : Smart Object.
7. What are the features of Python?
8. What are the basic building blocks of IoT device?
9. What do you mean by participatory sensing?
10. Enumerate the objectives of smart city.

PART B — (5 × 13 = 65 marks)

11. (a) What are the basic components of IoT? Discuss the different IoT level. (13)

Or

- (b) (i) Compare: IoT and M2M. (5)
(ii) Explain the significant steps of IoT design methodology. (8)

12. (a) Explain the ETSI M2M High-Level Architecture with diagram. (13)

Or

- (b) (i) What are the different types of functional groups in functional model? Explain. (5)
(ii) Explain the architecture of IoT Reference model. (8)

13. (a) (i) Explain the architecture of ZigBee. (8)
(ii) What are the activities of M2M standards? Explain. (5)

Or

- (b) (i) What is SCADA? Describe the architecture of SCADA. (8)
(ii) What is CoAP? Write its features (5)

14. (a) (i) What are the different Raspberry Pi interfaces? Explain. (8)
(ii) Explain the python data types and data structures. (5)

Or

- (b) (i) How to interface a light sensor with Raspberry Pi? Explain. (8)
(ii) Compare PuDuino and Cubieboard in terms of their features. (5)

15. (a) (i) What are the technical design constraints for developing and implementing IoT solutions? Explain. (8)
(ii) What are the expected benefits of M2M in asset management? Explain. (5)

Or

- (b) (i) Explain the architecture of Apache Hadoop. (8)
(ii) Write a note about Amazon Web Services for IoT. (5)

PART C — (1 × 15 = 15 marks)

16. (a) What is Smart Grid technology? Why Smart Metering is essential? Analyze. (15)

Or

- (b) Determine the various communication models that can be used for weather monitoring system. Which is a more appropriate model for this system? Describe the pros and cons. (15)