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BE Degree Examination May 2022

Sixth Semester

Computer Science and Engineering

18CST63 – MOBILE COMMUNICATION AND IoT

(Regulations 2018)

Time: Three hours

Maximum: 100 marks

Answer all Questions

Part – A ($10 \times 2 = 20$ marks)

1. List out any four interfaces in GPRS system. [CO1,K1]
2. Differentiate between infrastructure network and Adhoc network [CO1,K2]
3. Mention the role of things in IoT. [CO2,K1]
4. Why domain model specification is essential in IoT design methodology? [CO2,K2]
5. Write a python program to control a light connected with Raspberry Pi. [CO3,K3]
6. A car sends information about its location to a cloud based service. Does the car apply the IoT concept? Justify with reasons. [CO3,K4]
7. Distinguish between map and reduce algorithm in batch data analysis. [CO4,K2]
8. In what way apache storm is better for real time data analysis? [CO4,K3]
9. Specify the role of IoT in fog computing. [CO5,K1]
10. Edge and fog computing are inseparable and both are required for efficient data storage. Is it true? Justify with reasons. [CO5,K4]

Part – B ($5 \times 16 = 80$ marks)

11. a. Illustrate the functional architecture of GSM system with neat sketch and dwell briefly about the GSM sub systems. (16) [CO1,K2]

(OR)

- b. i) With neat sketch elaborate the protocol architecture of IEEE 802.11. (8) [CO1,K2]
- ii) Why handover is required in cellular system? Give a brief note on handover scenarios in GSM. (8) [CO1,K2]
12. a. i) With an example, explain the IoT communication models. (6) [CO2,K3]
- ii) Briefly illustrate the various IoT communication APIs. (10) [CO2,K1]

(OR)

- b. Surveillance cameras can switch modes depending on whether its day or night. When motion is detected, cameras may switch from lower to better resolution settings altering other cameras to do the same. Which level of IoT system might be suitable to depict the above scenario? Identify the IoT level and elaborate with neat sketch. (16) [CO2,K4]
13. a. i) Explain the interfacing of a sensor using Raspberry Pi using a smart traffic signal as an example. (10) [CO3,K3]
- ii) Is Raspberry Pi better than Arduino? In what way? Give the reason with an example. (6) [CO3,K4]
- (OR)
- b. With a suitable scenario, construct the design of a forest fire detection using necessary sensor and brief about the process involved in it. (16) [CO3,K3]
14. a. How the batch processing is organised in big data? Briefly illustrate the map reduce architecture and depict the use of map reduce 2.0-YARN in job Tracker. (16) [CO4,K2]
- (OR)
- b. To collect data from water resources from time to time, how the Apache spark will be utilised? Briefly illustrate with suitable scenario. (16) [CO4,K3]
15. a. With neat sketch elaborate the architecture and working of fog computing. (16) [CO5,K1]
- (OR)
- b. Give a brief note on: (16) [CO5,K1]
- i) IoT in Fog computing.
- ii) Applications and challenges of Fog computing.

Bloom's Taxonomy Level	Remembering (K1)	Understanding (K2)	Applying (K3)	Analysing (K4)	Evaluating (K5)	Creating (K6)
Percentage	27	30	29	14	-	-