

Total No. of Questions : 8]

SEAT No. :

P272

[6003]-350

[Total No. of Pages : 2

T.E. (Computer)

INTERNET OF THINGS AND EMBEDDED SYSTEMS

(2019 Pattern) (Semester - I) (Elective-I) (310245(A))

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) Attempt Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6, Q.7 or Q.8.
- 2) Neat diagram must be drawn wherever necessary.
- 3) Assume suitable data, if necessary.

Q1) a) Demonstrate the use of different networking components and devices required for the IoT application design. Consider smart irrigation system as an example for it. **[6]**

b) Demonstrate the IoT communication Models. **[6]**

c) Illustrate the different pillars of IoT. **[6]**

OR

Q2) a) Illustrate steps of IoT design methodology for smart forest fire detection. **[6]**

b) Demonstrate the Web socket API with suitable IoT system. **[6]**

c) Categorize requirement of connectivity technologies for IoT system development and explain any one of them in brief. **[6]**

Q3) a) Examine the different issues in standardization of IoT Protocols. **[6]**

b) Classify the different IoT Protocols used at Network layer and explain any one of them in brief. **[6]**

c) Show the use of LoRa protocol in the smart irrigation system development. **[5]**

OR

Q4) a) Classify between M2M and SCADA Protocol. **[6]**

b) Demonstrate the use of IP based protocols in the IoT Applications. **[6]**

c) Apply the appropriate IoT protocol to develop smart irrigation system with proper explanation. **[5]**

P.T.O.

Q5) a) Examine how Cloud Computing is an IoT enabling technology with the suitable example. [8]

b) Use the knowledge of Cloud Computing to demonstrate.

i) Auto Bahn for IoT

ii) Xively Cloud for IoT.

[10]

OR

Q6) a) Show that Cloud computing is the fusion of Grid Computing and SOA. [8]

b) Apply the concept of cloud computing to design the smart home system with proper explanation. [10]

Q7) a) Predict the possible vulnerabilities in designing smart home intrusion detection system. [8]

b) Apply the key elements of IoT security for securing the forest fire detection system with proper explanation. Enlist possible threats may encountered in designing such applications. [9]

OR

Q8) a) Illustrate the challenges in securing IoT applications. [8]

b) Use security concepts to identify different misuse cases (at least 03) in each of the following IoT applications: [9]

i) Smart Home Automation.

ii) Smart Parking System.

iii) Smart Irrigation Sytem.

