[6181]-395

B.E. (Electronics & Computer Engineering)
INTERNET OF THINGS
(2019 Pattern) (Semester-VII) (410343)

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) *Figures to the right indicate full marks.*
3) *Assume Suitable data if necessary.*

Q1) a) Explain Wireless Sensor Network with suitable diagram. Describe various design challenges in Wireless Sensor Network.   **[6]**

b) Write the features and services provided by Amazon Web Services (AWS) ToT Cloud Platform.   **[6]**

c) Explain Infrastructure as a Service (IaaS) with neat diagram. Write advantages of IaaS. Compare IaaS and PaaS.   **[8]**

OR

Q2) a) Explain with diagram how Wireless Sensor Network is used for smart home application.   **[6]**

b) Describe private cloud in detail with diagram. State its advantages. **[6]**

c) What is cloud computing? Explain need of cloud computing. Explain various features/characteristics of cloud computing.   **[8]**

Q3) a) Explain the following functions used in Arduino program.   **[8]**

   i)   pinMode()

   ii)   Serial.begin()

   iii) digitalWrite()

   iv)   analog Write()

b) Explain working of ultrasonic sensor with suitable diagram. Draw interfacing of ultrasonic sensor to Arduino UNO and write a program to measure the distance from obstacle.   **[8]**

OR

Q4) a) Write the features of Raspberry Pi. Draw interfacing of four LEDs to Raspberry Pi and write a program to turn ON and OFF all LEDs with a delay of 05 seconds. **[8]**

b) With the help of suitable block diagram explain step wise how data to cloud and analyzed using Raspberry Pi and any cloud platform. **[8]**

Q5) a) What are the characteristics of Big data? List out the components of Big data solution. Also explain each one in detail. **[8]**

b) What is Hadoop? Explain key features of Hadoop for Big Data. Write the advantages and disadvantages of Hadoop **[8]**

OR

Q6) a) What is big data? Explain need for modern corporate sector to go for big data strategy. Explain the different challenges of big data. **[8]**

b) Explain structured, semi-structured and unstructured data. Also compare structured, semi-structured and unstructured data. **[8]**

Q7) a) Explain the following with help of neat diagram **[9]**

i) Smart Health Care Monitoring by using IoT.

ii) Smart Agriculture Monitoring using IoT

b) What do you think citizens expect from their smart cities? What are the IoT use cases for smart cities. Give implementation details of any one use case. **[9]**

OR

Q8) a) What is wearable technology? Elaborate different modern trends in wearable technology in detail. **[9]**

b) Explain the following with help of neat diagram **[9]**

i) Greenhouse Monitoring using IoT.

ii) Smart Car Parking System using IoT.

❖ ❖ ❖