

Total No. of Questions : 8]

SEAT No. :

PA-1445

[Total No. of Pages : 2

[5926]-61

T.E. (Computer Engineering)

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) Answer 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 working of push-pull Communication model using Diagram with suitable application. [6]
- b) Illustrate any Communication API with Suitable IoT System. [6]
- c) Examine the use of each pillar of IoT with proper example. [6]

OR

- Q2)** a) Illustrate steps of IoT design methodology for weather forecasting system. [6]
- b) Demonstrate the use of RFID with the help of suitable IoT Application. [6]
- c) Classify different connectivity technologies required for IoT system development and explain any one of them in brief. [6]

- Q3)** a) Demonstrate the need of standardization of IoT Protocols. [6]
- b) Classify the different Topology of IEEE 802.15.4 with proper applications. [6]
- c) Show the use of LoRa protocol in suitable IoT application development. [5]

OR

- Q4)** a) Show the merits and demerits between RFID and SCADA protocol. [6]
- b) Illustrate the various IoT applications developed using IP protocols. [6]
- c) Examine that why ZigBee is popular than Wi-Fi and Bluetooth in IoT. [5]

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# SPPU-TE-COMP-CONTENT – KSKA Git

- Q5)** a) Demonstrate the Django framework with the suitable supporting application. [8]
- b) Use the knowledge of Cloud computing to demonstrate need of [10]
- Amazon Auto Scaling
  - Xively Cloud for IoT.

OR

- Q6)** a) Show how WAMP, its related concepts are useful in Cloud based IoT application Development. [8]
- b) Apply the concept of cloud computing to design the smart home system with proper explanation. [10]
- Q7)** a) Demonstrate the possible challenges in designing secure IoT applications. [8]
- b) Show the use of classic pillars of information assurance while securing the IoT application. [9]

OR

- Q8)** a) Examine how threat model is useful in securing IoT applications. [8]
- b) Use security concepts to identify different threats (at least 03 in each) in the following IoT applications: [9]
- Smart irrigation
  - Smart home System
  - Smart Surveillance System

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