

Time: 3 Hours

Max. Marks: 80

Instructions:

- 1) Attempt any Four question out of six questions.
- 2) All question carries equal marks.
- 3) Illustrate your answers with neat sketches wherever necessary.
- 4) Figures to the right indicate full marks.
- 5) Assume suitable additional data, if necessary and clearly state it.
- 6) All sub-questions of the same question should be grouped together.



- Q.1 (a) Give the function of each layer of a seven-layer IoT architectural reference model published by IoTWF architectural committee. 10
- (b) What is meaning of Smart object? Give the Security and privacy concerns of Smart objects in Internet of things. 05
- (c) Explain the characteristics of Smart object. Give the trends in smart objects. 05
- Q.2 (a) Explain the architectural classification of smart objects according to Things: Sensors and Actuators Layer. Give the classification of networks according to access technologies and distances considering in IoT based applications. 10
- (b) What are the factors based on the type of device involved and the function it will perform helps to choose right protocol for a particular IoT application? 05
- (c) Compare with suitable parameters COAP and MQTT application protocols used for IoT applications. 05
- Q.3 (a) Describe top 10 applications of IoT in existing market place. 10
- (b) Compare with suitable parameters between Raspberry Pi and Arduino. 05
- (c) Why RESTful JSON is a popular choice for IoT applications? 05
- Q.4 (a) What is Fog Computing? Give advantages and disadvantages of Fog computing. 05
- (b) What is Edge Computing? Give advantages and disadvantages of Edge computing. 05
- (c) Explain the different types of sensors are used for measuring one of the physical properties and give its representative examples. 10
- Q.5 (a) Explain in detail about Smart services in IoT system. 05
- (b) Write a short note on "Data Analytics Versus Business Benefits". 05
- (c) Draw and explain neat diagram of Protocol Stack for Transporting Serial DNP3 SCADA over IP. Give meaning of a master/slave relationship in DNP3. 10
- Q.6 (a) Explain at least five use cases where IoT involvements will convert cities into smart cities. 10
- (b) Compare any Five IoT software platforms with suitable parameters. 10