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

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