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)**	What is IoT? Compare with suitable criterion between Operational Technology (OT) and Information Technology (IT).	**10**
	(b)	With suitable examples, explain the types of sensors used in IoT systems.	**10**
Q.2	**(a)**	Explain the Smart Things: architectural classification considering Layer 1 Things-Sensors and Actuators Layer.	**10**
	(b)	Give the Categories of IoT application protocols and their transport methods. Describe the factors should be considered when selecting a transport layer for an IoT application layer protocol.	**10**
Q.3	**(a)**	Discuss the application of IoT in Cities.	**10**
	(b)	Compare with suitable factors Microsoft Azure IoT and Google Cloud IoT used as IoT Software platforms.	**10**
Q.4	**(a)**	Give the function of each layer of a seven-layer IoT architectural reference model published by IoTWF architectural committee.	**10**
	(b)	Explain the Enabling IoT Technologies.	**10**
Q.5	**(a)**	Explain Gateways and Backhaul Sublayer considering Layer 2: Communications Network Layer in IoT.	**10**
	(b)	Give the key components of a SCADA system. Describe CoAP message fields.	**10**
Q.6	**(a)**	Describe the application of IoT in Environment.	**10**
	(b)	Compare with suitable factors Particle Photon with ESP32 used for IoT application development.	**10**
