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*Question Paper consists of Part-A and Part-B*  
*Answer ALL the question in Part-A and Part-B*  
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PART-A (10X2 = 20M)

	Marks	CO	BL
1. a) Define Internet of Things. What were the first uses of IoT?	(2M)	CO1	2
b) What are the features of a wearable device watch?	(2M)	CO1	2
c) List the functions at the data-adaptation layer.	(2M)	CO2	2
d) Why is a gateway needed for networking?	(2M)	CO2	2
e) What are the functions of MQTT broker?	(2M)	CO3	2
f) What does constrained environment mean for IoT/M2M?	(2M)	CO3	2
g) What do you mean by data store? What are the different schemas for a data store?	(2M)	CO4	2
h) What does a relational database mean?	(2M)	CO4	2
i) List the service models of cloud computing	(2M)	CO5	2
j) Why is an SLA necessary to bind the services at the cloud?	(2M)	CO5	2

PART-B (5X10 = 50M)

2a. Draw the architectural view of the three domains in M2M applications. What are the software, development tools for the M2M applications development?	10(M)	CO1	2
(OR)			
3a. Explain the functions of Application Layer protocols—HTTP, HTTPS, FTP, Telnet and Ports.	10(M)	CO1	2
(OR)			
4a. Explain the Modified OSI Model for IoT/M2M systems. Describe how it differs from the traditional OSI reference model.	10(M)	CO2	2
(OR)			
5a. Write the Differences between NFC, BT LE, ZigBee and WLAN protocols.	10(M)	CO2	2

- 6a. Show diagrammatically and explain the features of LWM2M. 10(M) CO3 2
- (OR)
- 7a. Explain the communication gateway and proxies between CoAP objects and web applications. 10(M) CO3 2
- 8a. What does spatial database mean? What are additional data fields that spatial data possess? 10(M) CO4 2
- (OR)
- 9a. How does SQL differ from NOSQL? 10(M) CO4 2
- 10a. What are the functionalities in Nimbits for IoT applications? 10(M) CO5 2
- (OR)
- 11a. List the datapoints, summary points, alerts, data channels, subscriptions for alerts and messages required in Internet of Waste Containers Management. 10(M) CO5 2

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