Time: 3 hrs Marks: 80

Note: 1. Question 1 is compulsory
2. Answer any three out of remaining questions
3. Assume suitable data where required

Q1	Solve any 4	
a)	Explain Bluetooth Low Energy(BLE) role	5
b)	Briefly elaborate the COAP	5
c)	Explain data retention strategy.	5
d)	Explain the concept of I-IoT and its similarity with IoT	5
e)	Explain the characteristic of IoT	5
Q2		
a)	How can IoT analytics be effectively utilized within IoT-based healthcare systems? Additionally, what are some essential parameters that should be incorporated into the patient dashboard for comprehensive monitoring and management of health data?	10
b)	Evaluate long-range communication systems and protocols such as LTE, LTE-A, LoRa, and LoRaWAN in the context of IoT connectivity. Discuss their suitability for different IoT use cases based on factors like coverage, data rate, power consumption, and scalability.	10
Q3		
a)	Define the role of analytics in IoT technology and elaborate the challenges associated with it.	10
b)	Elaborate the need of new network architecture in IoT.	10
Q4		
a)	Compare edge, fog and cloud computing w.r.to its hierarchy.	10
b)	Consider smart smoke detection system. Elaborate its working and list down the different types of sensors and actuators required during the deployment scenario.	10
Q5		
a)	Explain the role of HTTP, WebSocket, and MQTT in IoT communication. Compare and contrast these protocols in terms of their characteristics, suitability for different IoT scenarios, and support for real-time data transmission.	10
b)	Discuss the functional blocks of IoT architecture, highlighting their roles and interactions. Provide examples to illustrate the importance of each block in the overall functionality of IoT systems.	10
Q6		
a)	Elaborate the Smart Object with diagram and describe its characteristics.	10
b)	Explain the following access technologies with applications area of each 1) IEEE 802.15.4 2) Z-wave 3) LTE-A	10

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