ET1415 Question Bank IoT Architecture and Protocol (Dr P R Deshmukh)

1. Explain characteristics of IOT along with its application.
2. Explain benefits of IoT. Also explain future of IoT.
3. Explain 4 layer architecture of IoT.
4. What is the problem with IoT security? Also explain key element of IoT security.
5. Explain with neat sketch different layers of IoT .
6. Explain in detail architecture outline of IoT.
7. Differentiate between M2M and IoT. Explain architecture of M2M n/w.
8. Explain different levels in IoT.
9. What are M2M gateways. Explain with neat sketch M2M architecture.
10. What is IoT, and how does it differ from traditional computing systems?
11. Explain the key components of an IoT ecosystem.
12. What are the main challenges in designing IoT systems?

13. Explain the reference model of iot by Cisco?
14. How does the IOT work? explain each component.
15. Explain end to end architecture of IoT system along with its diagram.
16. Describe different views of architecture.
17. Explain Functional view of IoT with its Diagram.
18. Explain logical view of Iot n/w.
19. State Difference between reference architecture and reference model.
20. Explain information view and Functional view of Iot n/w.
21. Explain different views of IoT system.
22. What is the work of a Control Gateway in the end to end architecture of Iot n/w
23. Describe the layered architecture of IoT systems. What are the roles of each layer?
24. What is the role of the perception layer in IoT architecture? Provide examples of devices in this layer.
25. How does the network layer facilitate communication in IoT systems? Mention some protocols used in this layer.
26. What is the significance of the processing layer in IoT architecture? How does edge computing fit into this layer?
27. Explain the application layer and its importance in delivering value to end-users
28. What are the main design principles for building an IoT architecture? Explain each principle.
29. Why is scalability important in IoT systems, and how can it be achieved?
30. Discuss the importance of interoperability in IoT. How can it be ensured?
31. What are the key capabilities required for an effective IoT architecture?

32. Explain real world design constraints in IOT.
33. What is technical design constraints in IoT.
34. Explain RFID technology in detail.
35. What is RFID tag,,RFID reader and AIDC.
36. Describe Bluetooth low energy protocol.
37. Explain Zigbee Protocol for smart energy application .
38. Describe Wireless HART protocol

39. Explain WSN technology in detail.
40. Compare and contrast Zigbee and Bluetooth protocols. Where are they typically used in IoT?
41. What role do communication protocols like Zigbee play in IoT systems?
42. Why are standards important in IoT? Provide examples of IoT-specific standards.
43. How does IoT architecture support real-time monitoring and control in industrial settings?
44. Discuss the role of IoT in enabling smart home systems.
45. Describe Business process in IoT?

46. What is different transport layer Protocol?
47. Explain TCP and UDP in detail .
48. What is HTTP in Session layer Protocol ? explain in detail.
49. Difference between Session layer and Transport layer Protocol.
50. Explain TCP, MPTCP, DCCP protocol in detail .
51. What is TLS and DTLS ..Also tell the difference between them.
52. What is the Function of Transport Layer and Session layer in IoT architecture.
53. Explain the role of OneM2M in IoT architecture.
54. Elaborate Design an IoT architecture for a smart engery / Wireless Heart system. What components and protocols would you use?
55. How is data managed in IoT systems? Discuss the role of cloud and edge computing.
56. What are the challenges of handling large volumes of data in IoT?
57. How does edge computing reduce latency in IoT systems

58. Explain Security problems in IoT and solutions over it .
59. What is the service layer Protocol in IoT system?
60. Explain one M2M,ETSI M2M in IoT security .
61. What is BBF and OMA in the security protocol.
62. Explain in brief MAC 802.15.4.
63. What are the major security challenges in IoT systems?
64. How can encryption and authentication mechanisms enhance IoT security?
65. Discuss the importance of privacy in IoT and how it can be addressed. What is M2M communication, and how does it relate to IoT?
66. How does M2M differ from IoT in terms of scope and functionality?
67. Provide examples of M2M applications in IoT.
68. Explain how you would address security concerns in a smart healthcare IoT system.
69. Discuss the challenges of implementing IoT in a large-scale industrial environment.
70. List the examples of IoT applications in smart cities, healthcare, and industrial automation and list