Internet of Things
Short Questions
Unit - I

1. What is the Internet of Things (IoT)?
2. List three characteristics of IoT.
3. Explain the physical design of IoT systems.
4. How does the logical design of IoT differ from its physical design?
5. Name three technologies that enable IoT.
6. What are the different levels of IoT deployment?
7. Describe an IoT deployment template.
8. How is IoT applied in home automation?
9. What role does IoT play in environmental monitoring?
10. How can IoT contribute to agriculture?
11. In what ways does IoT impact health management?
12. How does IoT enhance lifestyle experiences?
13. What are the key components of an IoT device?
14. How do sensors contribute to IoT solutions?
15. What is the significance of connectivity in IoT?
16. Explain the concept of IoT device management.
17. How does data analytics enhance IoT applications?
18. What are the security challenges in IoT?
19. How do privacy concerns arise in IoT applications?
20. What are the ethical considerations in IoT usage?
21. Describe an example of an IoT solution in smart farming.
22. How can IoT improve patient care in healthcare?
23. What is the role of artificial intelligence in IoT?
24. How does cloud computing support IoT?
25. What are edge computing and its importance in IoT?
26. Can you explain the term "smart cities" in relation to IoT?
27. How do IoT devices communicate with each other?
28. What protocols are commonly used in IoT communications?
29. Explain the concept of a digital twin in IoT.
30. How do IoT devices get powered?
31. What is the role of IoT in disaster management?
32. How can IoT aid in water resource management?
33. Describe an IoT application in traffic management.
34. How does IoT contribute to energy efficiency?
35. What is the role of IoT in supply chain management?
36. How does IoT facilitate remote work?
37. Explain how IoT is transforming the retail industry.
38. What challenges do IoT deployments face in rural areas?
39. How is IoT used in educational settings?

40. What are the future trends in IoT development?
41. How does IoT assist in elderly care?
42. Describe an IoT-based security system for homes.
43. How do IoT devices interface with mobile applications?
44. What is the impact of IoT on industrial automation?
45. How do wearables fit into the IoT ecosystem?
46. What are the interoperability issues in IoT?
47. How is blockchain technology used in IoT?
48. What are the maintenance challenges in IoT systems?
49. How do IoT and robotics work together?
50. What are the benefits and risks of IoT in public spaces?

Unit - II

51. What is Machine to Machine (M2M) communication?
52. How does IoT differ from M2M communication?
53. Explain the role of SDN (Software-Defined Networking) in IoT.
54. What is NFV (Network Functions Virtualization) and how does it support IoT?
55. Describe the NETCOZF framework in the context of IoT system management.
56. Why is IoT system management important?
57. What is the Simple Network Management Protocol (SNMP)?
58. List some network operator requirements for IoT systems.
59. What is NETCONF used for in IoT?
60. Explain the purpose of YANG in IoT system management.
61. How do IoT and M2M technologies impact industry automation?
62. What benefits do SDN and NFV offer to IoT deployments?
63. Compare and contrast NETCONF and SNMP.
64. How does YANG facilitate IoT device configuration?
65. What challenges are addressed by IoT system management?
66. Describe a use case for IoT and M2M communication in smart cities.
67. How does IoT system management contribute to scalability?
68. What security features are essential for IoT and M2M communication?
69. How can NETCONF improve IoT device management?
70. In what ways does IoT system management affect user experience?
71. Explain how SDN and NFV contribute to IoT flexibility and efficiency.
72. What role does IoT system management play in ensuring device interoperability?
73. How does YANG modeling enhance the management of IoT devices?
74. What are the limitations of SNMP in IoT system management?
75. How do SDN and NFV technologies facilitate IoT network management?
76. Describe the impact of IoT and M2M on healthcare delivery.

77. How can NETCOZF be applied in managing large-scale IoT deployments?
78. What advancements in IoT system management are expected in the near future?
79. How do M2M communications contribute to the development of smart homes?
80. What protocols support IoT and M2M communication beyond NETCONF and SNMP?
81. How does the integration of SDN and NFV with IoT offer competitive advantages?
82. Describe a scenario where IoT system management significantly improves operational efficiency.
83. How can IoT system management tools prevent network failures?
84. What is the significance of modeling languages like YANG in IoT ecosystems?
85. How do NETCONF and YANG complement each other in IoT system management?
86. Discuss the importance of network operator requirements in the design of IoT systems.
87. How can IoT and M2M communication be secured against cyber threats?
88. What are the economic implications of adopting SDN and NFV in IoT systems?
89. Explain how IoT system management can support environmental monitoring.
90. Describe the challenges faced in managing diverse IoT devices.
91. How does IoT system management impact the lifecycle of IoT devices?
92. What strategies can be used to enhance the efficiency of IoT system management?
93. How does IoT system management facilitate real-time data processing?
94. Discuss the future of IoT and M2M communication technologies.
95. What is the role of artificial intelligence in IoT system management?
96. How can IoT system management be optimized for energy efficiency?
97. What are the best practices for implementing IoT system management solutions?
98. How do developments in IoT and M2M communication influence consumer electronics?
99. What is the potential of IoT system management in managing smart grids?
100. Discuss the role of standards in ensuring the interoperability of IoT systems.

Unit - III

101. How is Python used in the logical design of IoT systems?
102. What makes Python suitable for IoT system development?
103. List the basic data types in Python.
104. Describe the different data structures available in Python.

105. How do control flow statements work in Python?
106. Explain the significance of functions in Python programming.
107. What are modules in Python and how are they used?
108. Discuss the process of packaging in Python.
109. How is file handling managed in Python?
110. Describe how to perform date and time operations in Python.
111. What are classes in Python and why are they important for IoT?
112. Explain exception handling in Python.
113. Identify some Python packages that are of interest for IoT development.
114. How does Python support the development of IoT device management software?
115. In what ways can Python be used to process data from IoT devices?
116. Discuss the role of Python in data analytics for IoT.
117. How are Python's data structures useful in managing IoT data?
118. Explain how Python's control flow constructs can be applied in IoT scenarios.
119. What benefits do Python's modules and packages offer to IoT system developers?
120. How can Python be used to interface with external hardware in IoT devices?
121. Discuss the importance of file handling in IoT applications developed with Python.
122. How does Python facilitate the creation of user interfaces for IoT devices?
123. Give examples of how exception handling in Python can prevent IoT system failures.
124. What are the advantages of using Python for network programming in IoT?
125. Describe a project where Python's capabilities are particularly beneficial in IoT system development.