IOT qb

Section 1 (7 marks per question)

Q1. Define 'cloud computing' and explain how it delivers resources to users. Discuss the different types of cloud services and their benefits. Provide a diagram illustrating the cloud computing architecture. Explore applications of cloud computing in various domains.

Component	***Marks***
Definition	1 mark
Explanation	2 marks
Diagram	2 marks
Applications	2 marks

Q2. Describe the 'Internet of Things' (IoT) paradigm. Explain how IoT enables communication and interoperability between physical and virtual objects. Provide a diagram depicting the architecture of an IoT system. Discuss the benefits and challenges of IoT.

Component	***Marks***
Definition	1 mark
Explanation	2 marks
Diagram	2 marks
Applications	2 marks

Q3. Explain the convergence of cloud computing and IoT. Describe how cloud computing can enhance the capabilities of IoT applications. Provide a diagram illustrating the integration of cloud and IoT technologies. Discuss the potential benefits and limitations of this convergence.

Component	***Marks***
Definition	1 mark
Explanation	2 marks

Diagram	2 marks
Applications	2 marks

Q4. Describe the challenges in managing IoT resources in the cloud. Explain how resource optimization techniques can address these challenges. Provide a diagram illustrating the resource management process. Discuss the factors that contribute to the sophistication of resource management schemes.

Component	***Marks***
Definition	1 mark
Explanation	2 marks
Diagram	2 marks
Applications	2 marks

Q5. Explain the concept of 'IoT service scheduling'. Describe how scheduling regulates access to cloud and sensor resources. Provide a diagram illustrating the scheduling process. Discuss the distinction between sensor and cloud resources and their impact on scheduling.

Component	***Marks***
Definition	1 mark
Explanation	2 marks
Diagram	2 marks
Applications	2 marks

Q6. Discuss the importance of semantic annotation in IoT resource management. Explain how ontologies and metadata can enhance the interoperability and usability of IoT resources. Provide a diagram illustrating the role of semantics in IoT resource management. Explore applications of semantic annotation in various domains.

Component	***Marks***
Definition	1 mark
Explanation	2 marks
Diagram	2 marks

Applications	2 marks

Q7. Describe the benefits of open-source solutions for IoT resource management in the cloud. Explain how open-source software promotes collaboration and innovation. Provide a diagram illustrating the advantages of open-source infrastructure. Discuss the challenges and limitations of open-source adoption.

Component	***Marks***
Definition	1 mark
Explanation	2 marks
Diagram	2 marks
Applications	2 marks

Q8. Discuss the role of the cloud in enabling the development and deployment of edge computing applications. Explain how edge computing leverages cloud resources to enhance responsiveness and data processing. Provide a diagram illustrating the architecture of an edge computing system. Explore the potential of edge computing in various industries.

Component	***Marks***
Definition	1 mark
Explanation	2 marks
Diagram	2 marks
Applications	2 marks