TIME:3Hours Total Marks: 80

N.B.: (1) Question No. 1 is **compulsory**.

(2) Solve any **three** questions from the remaining **five**

(3) **Figures** to the **right** indicate **full** marks

(4) Assume suitable data if necessary and mention the same in answer sheet.

Q.1 Attempt any 4 questions [20]

a) Discuss the role of middleware in cloud computing.
b) Analyze the advantages of Integrating Machine Learning with IoT?
c) What are the two goals of a data retention strategy for IoT data?
d) What are the benefits of using linked analytical datasets (LAD) for IoT analytics?
e) Explain Infrastructure as Code.

Q.2 a) Compares and contrasts grid computing and service-oriented architecture as the direct technological ancestors of cloud computing. [10]

b) Which on Cloud of Things Architecture would be best suitable for smart logistics application? [10]

Q.3 a) What role can Machine Learning and IoT play in agriculture? [10]

b) Explain the concept of constrained devices in IoT and how it affects the data quality and analytics challenges. [10]

Q.4 a) Explain the OpenFog Reference Architecture in detail. [10]

b) Which Fog topology is most suitable for smart city applications? [10]

Q.5 a) Explain the principles and components of the Software-Defined Perimeter architecture. [10]

b) Explain following cyberattacks [10]

i. Phishing
ii. Password attack
iii. DDOS
iv. Man in the Middle (MITM)
v. Malvertising

Q.6 a) What is source code management in DevOps? [10]

b) Explain the DevOps frameworks. [10]

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