PB2505

SEAT No. :

[Total No. of Pages : 2

[6263]-391
B.E.(AI&DS)
DISTRIBUTED COMPUTING
(2019 Pattern)(Semester - VIII)(417531)

Time : 2½ Hours]   *[Max. Marks :70*
Instructions to the candidates:
1) *Answer Q1or Q2, Q3 or Q4, Q5 or Q6, Q7 or Q8.*
2) *Neat diagrams must be drawn Wherever necessary.*
3) *Figures to the right indicate full marks.*
4) *Use electronic pocket calculator is allowed.*

Q1) a) List and explain any one variant of Paxos in detail. **[6]**

b) Explain Fault Tolerance and Recovery in context of Distributed systems. **[6]**

c) Explain reinforcement Learning for Dynamic Load Balancing. **[6]**

OR

Q2) a) What is consensus algorithms? Explain any one algorithm. **[6]**

b) Explain Genetic Algorithms for Task Scheduling. **[6]**

c) Compare Centralized Load Balancing & Distributed Load Balancing Techniques. **[6]**

Q3) a) Explain Systems and Architectures for Distributed Machine Learning. **[9]**

b) Write note on **[8]**
   i) Federated Learning,
   ii) Hogwild
   iii) Elastic Averaging SGD

OR

Q4) a) What is Apache Spark? Explain working of Apache Spark. **[9]**

b) Explain how integration of AI algorithms in distributed systems can help in Intelligent Resource Management, Anomaly Detection. **[8]**

P.T.O.

Q5) a) Explain the Big data processing frameworks in distributed computing. **[6]**

b) Differentiate between SIMD and MIMD. **[6]**

c) Elaborate various scalable data ingestion methods used in distributed computing environments. **[6]**

OR

Q6) a) Explain how AI and data science can be applied for large-scale data processing and analytics. **[6]**

b) Compare SISD and MISD **[6]**

c) Discuss about various types of real-time analytics used in distributed computing systems. **[6]**

Q7) a) Explain Anomaly as well as Behavior AI-based Intrusion Detection&Threat Mitigation Techniques **[9]**

b) Explain how can Secure Multi-Party Computation(SMPC)be effectively implemented to ensure confidentiality and privacy preservation. **[8]**

OR

Q8) a) Enlist the various security challenges in distributed systems? Elaborate any three challenges in detail? **[9]**

b) Write a Short Note a Threat Hunting and Visualization. **[8]**

෬෬෯෯ ෬෬෯෯ ෬෬෯෯