

Time: (3 Hours)

[Total Marks: 80]

- N.B.:** 1) Question No. 1 is compulsory.
2) Answer any three out of remaining questions.
3) Assume suitable data if necessary.
4) Figures to the right indicate full marks.

- Q1. (a) Briefly explain properties of knowledge representation system. (5)
Q1. (b) Differentiate between partial order planning and hierarchical planning. (5)
Q1. (c) List down Big Data Characteristics. (5)
Q1. (d) Compare OLTP and OLAP. List one example of each, (5)
- Q2. (a) Define Data Mining. What are the issues in data mining?, (10)
(b) Define agent. List different types of agents. Explain Goal based and utility-based agents. (10)
- Q3. (a) With a neat Diagram explain the components of Expert System. (10)
(b) List Big data characteristics. Explain Massively Parallel Processing (MPP) architecture. (10)
- Q4. (a) Differentiate between supervised and unsupervised learning. Explain briefly different classification algorithms. (10)
(b) what is data warehouse? Explain the architecture of data warehouse. Differentiate between Logic driven modeling, data driven modeling. (10)
- Q5. (a) Why is dimensionality reduction important? How feature extraction is different from feature selection? (10)
(b) Explain Data Pre-processing. What are the methods of handling incomplete data? Explain by giving examples. (10)
- Q6. Explain **any Two**: (20)
a) Clustering Algorithms
b) Time series Analysis and Forecasting
c) Hidden Markov model
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