

Total No. of Questions : 8]

SEAT No. :

P-1602

[Total No. of Pages : 2

[6002]-232

S.E. (Artificial Intelligence & Machine Learning)
FUNDAMENTALS OF ARTIFICIAL INTELLIGENCE
AND MACHINE LEARNING
(2019 Pattern) (Semester - IV) (218553)

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates :

- 1) Answer Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6, Q.7 or Q.8.*
- 2) Neat diagrams must be drawn wherever necessary.*
- 3) Figures to the right indicate full marks.*
- 4) Assume Suitable data, if necessary.*

- Q1)** a) Explain Semantic Network Representation with example? State the drawbacks of Semantic Network Representation. [6]
- b) What is Proposition in AI? Explain types of Propositions with example.[6]
- c) State and explain rules of inference. [6]

OR

- Q2)** a) Explain Frame Representation with its merits and demerits. [6]
- b) Compare Forward Chaining and Backward Chaining. [6]
- c) What is the relationship between knowledge and intelligence? Explain AI knowledge cycle. [6]

- Q3)** a) What is difference between AI and ML? [8]
- b) Explain the Cross-validation with diagram. [9]

OR

- Q4)** a) Explain qualitative and quantitative data. [8]
- b) Explain data preprocessing with example. [9]

P.T.O.

- Q5)** a) What is Supervised and Unsupervised Learning? Give real life example of supervised and unsupervised learning. [6]
b) What is Dimensionality Reduction? Explain Subset Selection in detail. [6]
c) Write short note Principal Component Analysis. [6]

OR

- Q6)** a) Explain different types of Learning Models in Machine Learning. [6]
b) Explain with example Forward and Backward Selection method for Subset Selection. [6]
c) Why do we need Dimensionality Reduction? What are its drawbacks? [6]

- Q7)** a) What is univariate and multivariate regression? Explain any two measures of performance evaluation of Regression Model. [7]
b) Explain One-Vs-One construction method of multiclass classifier with suitable example. [6]
c) Justify the following : [4]
i) Prediction of the height of a person. Is it a regression task?
ii) Find the gender of a person by analyzing his writing style. Is it a classification task?
iii) Filter out spam emails. Is it a example of unsupervised learning.
iv) "Identifying type of fruit" Is this a regression task or classification?

OR

- Q8)** a) What is regression? Explain SSE, MSE and MAE in context of regression. [7]
b) Define following terms with suitable example : [6]
i) Confusion Matrix
ii) False Positive Rate
iii) True Positive Rate
iv) Accuracy
v) F1-Score
c) Explain under fit, over fit and just fit models for Regression. [4]

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