

RAN-2511000608022001
M.Sc. (IT) (Sem.- VIII) Examination April - 2026
Artificial Intelligence and Machine Learning (Paper - 802)
Time: 3 Hours]
[Total Marks: 70

સૂચના : / Instructions (1) ઉપરોક્ત દર્શાવેલ વિગતો ઉત્તરવહી પર અવશ્ય લખવી. Fill up strictly the above details on your answer book (2) Do as directed. (3) Draw the figure wherever necessary.	Seat No.: Student's Signature
---	--

- Q.1. Answer the following: 14**
- A. What is an Artificial Agent? Explain about simple reflex, goal based and utility based agents. 7
- Or**
- How knowledge is represented in Artificial Intelligence? Explain about different types of knowledge.
- B. What is reasoning in artificial intelligence? Explain about any 2 types of reasoning. 5
- C. List out any 4 applications of computer vision. 2
- Q.2. Answer the following: 14**
- A. What is the exploratory data analysis (EDA)? Explain about steps to build supervised machine learning model. 7
- Or**
- Explain about real world applications of machine learning.
- B. What are the 2 major applications of supervised machine learning? Explain each one with example. 5
- C. What is reinforcement learning? 2
- Q.3. Answer the following: 14**
- A. What are the features of data in machine learning? Also explain different types of data with respect to machine learning. 7
- Or**
- What are univariate and multi-variate linear regression? Explain polynomial regression algorithm with appropriate example.
- B. Explain about Logistic regression with appropriate example. 5
- C. What is ordinal logistic regression? Give an example of it. 2
- Q.4. Answer the following: 14**
- A. Explain about Exclusive clustering with example. Also explain its advantages and disadvantages. 7
- Or**
- What are the steps of principle component analysis? Explain about it with appropriate example.

- B. Explain about stopping criterion and cluster quality with respect to clustering. 5
C. What is centroid? How it is computed? 2

Q.5. Answer the following: 14

- A. Calculate MSE and R squared error with respect Linear Regression for the given data set: 7

X	21	22	23	24	25
Y	21	25	29	27	24

- B. What is confusion matrix? Explain various terms of it. 5
C. What does AUC-ROC curve represents? 2
