

**M.C.A. Sem.-2 Examination
Machine Learning**

Time : 3.00 Hours]

July-2025

[Max.Marks : 50

Instructions:

- Write both the Sections in the separate answer book.
- Both Sections having equal weightage.
- Draw Diagrams wherever necessary.
- Make Assumptions wherever necessary.

SECTION – I

Q.1 Answer the following questions:

[09]

- (a) Explain the challenges of working with unstructured data. How can these challenges be addressed during preprocessing?
- (b) What is the role of the log-odds (logit) in logistic regression?
- (c) What are the key assumptions in linear regression?

Q.2 Attempt the following (Any TWO)

[08]

- (a) Consider the following training dataset and predict the class label of the new points ($x_1=3, x_2=7$) and ($x_1=4, x_2=4$) using 3NN algorithm.

X1	X2	y
7	7	0
7	4	1
3	4	1
1	4	0

- (b) Convert the word "ELEPHANT" to "RELEVANT" using the minimum number of edit operations.
- (c) Describe the steps involved in the K-means clustering algorithm. How does it ensure convergence?

Q.3 Explain the algorithm of fuzzy-c-means with example.

[08]

OR

Q.3 For a medical diagnosis model that predicts a rare but serious disease, which evaluation metric would you prioritize, justify?

[08]

(P.T.e)

Q.4 Answer the following questions:

[09]

- List any three applications of clustering in real-world scenarios.
- What is the Minkowski distance, and how does it generalize Euclidean and Manhattan distances?
- What is the primary goal of SVM in classification tasks?

Q.5 Attempt the following (Any TWO)

[08]

- Explain the working of the Random Forest algorithm in your own words.
- Explain different types of linkage in clustering with proper example.
- What is the difference between Bagging and Boosting?

Q.6 You are given the following 2D data points:

[08]

Point	X	Y
A	2	2
B	3	2
C	6	5
D	7	6

Perform agglomerative hierarchical clustering using Euclidean distance and the complete linkage method to form the cluster and also show the dendrogram.

OR

Q.6 You are given the following dataset of 6 samples with two features (Outlook and Humidity) and a binary target variable (Play Tennis):

[08]

Sample	Outlook	Humidity	Play Tennis
1	Sunny	High	No
2	Sunny	High	No
3	Overcast	High	Yes
4	Rain	High	Yes
5	Rain	Normal	Yes
6	Rain	Normal	No

- Compute the entropy of the target variable (Play Tennis).
- Compute the information gain for both attributes: Outlook and Humidity.
- Identify the best attribute for the root node

0107E798-3

Candidate's Seat No: _____

M.C.A. Sem.-2 Examination

Web Designing

July-2025

Time : 3.00 Hours]

[Max.Marks : 50

Instructions:

- Write both the Sections in the separate answer book.
- Both Sections having equal weightage.
- Draw Diagrams wherever necessary.
- Make Assumptions wherever necessary.

SECTION – I

Q-1 Attempt the following (any five)

15

1. Describe some common reasons HTML code might not validate correctly.
2. Name three differences between paper-based and screen-based design.
3. What are two types of URL? What type of URL links to another server? What affects the format of the URL for your Web site?
4. What four navigation questions should the user be able to answer?
5. List three characteristics of HTML that make it ideal for the World Wide Web.
6. Name three ways to create a unified look for your site.
7. List the four variables to consider when testing your Web site.
8. List and explain any three guidelines of WCGA.

Q-2 Attempt the following (any five)

10

1. What does the <!DOCTYPE> statement specify?
2. What is the function of the new HTML <canvas> element?
3. What is a prime reason users may leave a Web site?
4. Explain active versus passive white space.
5. What is the difference between removing the border attribute and setting border="0"?
6. What do you mean by breadcrumb path? Write one example of breadcrumb path.
7. Write full form of I. DTD II. MIME

(P.T.O)

SECTION – II

Q-3 Attempt the following (any three)

15

1. Explain the difference between fixed, fluid, and responsive layouts. Give examples of when each might be used.
2. Explain how media queries can be used to make web forms responsive. Show an example of a form that adjusts its layout on smaller screens.
3. Compare two layout techniques—CSS Flexbox and CSS Grid—for designing form layouts. When would you choose one over the other in real-world projects?
4. Describe the structure of a typical navigation menu using HTML. What tags are commonly used to create navigation bars? Provide a simple code example.
5. Write a style rule for a `<p>` element that creates left and right padding of em, a left margin of pixels, and a left black medium double border.

Q-4 Attempt the following (any five)

10

1. What are the three space areas in the box model?
 2. What CSS property can you use to change the alignment of the `<caption>` element?
 3. With reference to responsive web design, what do you mean by
I. breakpoint II. viewport
 4. What are the three special selectors that let you change link colors?
 5. Explain the following terms with reference to color and graphics
I. color gamut II. Interlacing
 6. What is the use of following in CSS? I. `!important` II. `@import`
 7. What are the three possible values of the clear property in css?
 8. What are the benefits of using navigation graphics?
-