# B.L.D.E.A's V.P. Dr. P.G. Halakatti College Of Enginering and Technology Vijyapur 586103

## Department of AIML

## Question Papers Dec.2024/Jan.2025

# CBCS SCHEME

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## Fifth Semester B.E./B.Tech. Degree Examination, Dec.2024/Jan.2025
## Image and Video Processing

Time: 3 hrs.                                                                 Max. Marks: 100

*Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.*
*2. M : Marks , L: Bloom's level , C: Course outcomes.*

| | | Module – 1 | M | L | C |
|---|---|---|---|---|---|
| Q.1 | a. | Clearly mention the components of an image processing system. Give diagram. | 10 | L1 | CO1 |
| | b. | What is image sensing and acquisition? With appropriate equations, explain the image sampling and quantization. | 10 | L1 | CO1 |
| | | **OR** | | | |
| Q.2 | a. | What is Digital image processing? Mention atleast 8 examples of fields where Digital image processing used in detail. | 10 | L1 | CO1 |
| | b. | With neat diagram, elucidate the fundamental steps in digital image processing. | 10 | L1 | CO1 |
| | | Module – 2 | | | |
| Q.3 | a. | Briefly explain the preliminary concepts in frequency domain. Give background details. | 10 | L1 | CO2 |
| | b. | In detail explain histogram processing. Give necessary equations and diagrams. | 10 | L1 | CO2 |
| | | **OR** | | | |
| Q.4 | a. | What is special filtering? Give its types. Give intensity transformation functions List. | 10 | L1 | CO2 |
| | b. | In detail explain the following : <br> (i) Sampling <br> (ii) Fourier transform of sampled functions. | 10 | L2 | CO2 |
| | | Module – 3 | | | |
| Q.5 | a. | Explain the periodic noise reduction by frequency domain filtering. | 10 | L2 | CO3 |
| | b. | With respect to the Image segmentation, explain the point, Line and edge detection. Clearly show these detections are applied an image segmentation. | 10 | L3 | CO3 |
| | | **OR** | | | |
| Q.6 | a. | Explain the model of image degradation / restoration process. | 10 | L2 | CO3 |
| | b. | Illustrate how is restoration is performed in the presence of noise only. Give restoration details. | 10 | L3 | CO3 |
| | | Module – 4 | | | |
| Q.7 | a. | Define Video processing. Write how buffer data are managed in Video transmission. Give suitable diagram. | 10 | L3 | CO4 |
| | b. | Explain motion detection in detail with neat diagram. | 10 | L2 | CO4 |
| | | **OR** | | | |
| Q.8 | a. | Explain Spatio-temporal sampling structures. Explain its types. | 10 | L2 | CO4 |

| | b. | How are sampling structure conversion helps video processing to maintain its accuracy and clarity to display. Explain. | 10 | L3 | CO4 |
|---|---|---|---|---|---|
| | | **Module – 5** | | | |
| Q.9 | a. | Explain Koinescope Moire removal and scratch removal. | 10 | L2 | CO5 |
| | b. | How are video enhancement is stable in video processing? Draw and explain with neat diagram. | 10 | L3 | CO5 |
| | | **OR** | | | |
| Q.10 | a. | Write short notes : <br> (i) Spatio-temporal noise filtering. <br> (ii) Coding artifact reduction. | 10 | L3 | CO5 |
| | b. | How blotch detection used to removal of video enhancement to gain video quality. Give the steps. | 10 | L3 | CO5 |

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**18AI56**

## Fifth Semester B.E. Degree Examination, Dec.2024/Jan.2025
# Mathematics for Machine Learning

Time: 3 hrs.                                                                 Max. Marks:100

**Note:** *Answer any FIVE full questions, choosing ONE full question from each module.*

### Module-1

1. a. Define vector spaces, subspaces. Show that the set S = {(1, 0, 1), (1, 1, 0), (−1, 0, −1) is linearly dependant in $V_3(R)$. **(10 Marks)**

   b. By Gaussian elimination, find the inverse of the matrix :
   $$A = \begin{bmatrix} 1 & 2 & 3 \\ 2 & 5 & 3 \\ 1 & 0 & 8 \end{bmatrix}.$$
   **(10 Marks)**

### OR

2. a. Solve the system of linear equations using elementary row operations.
   $2x + y + 4z = 12$
   $4x + 11y − z = 33$
   $8x − 3y + 2z = 20.$ **(06 Marks)**

   b. Define :
   i) Norm on vector space U
   ii) Inner product in $R^n$
   iii) Angle between vectors. **(06 Marks)**

   c. Find rank of the matrix A by reducing into echelon form
   $$A = \begin{bmatrix} 2 & -1 & -3 & -1 \\ 1 & 2 & 3 & -1 \\ 1 & 0 & 1 & 1 \\ 0 & 1 & 1 & -1 \end{bmatrix}.$$
   **(08 Marks)**

### Module-2

3. a. Write a note on orthogonal and orthonormal vectors. If a = $[−2, 1]^T$, b = $[−3, 1]^T$, c = $\left[\frac{4}{3}, -1, \frac{2}{3}\right]^T$ and d = $[5, 6, −1]^T$, then compute :

   i) $\left(\frac{a.b}{a.a}\right).a$

   ii) Find a unit vector 'u' in the direction c

   iii) Show that 'd' is orthogonal to c. **(10 Marks)**

   b. Find the eigen values and eigen vectors of the matrix $A = \begin{bmatrix} 3 & 1 & 4 \\ 0 & 2 & 6 \\ 0 & 0 & 5 \end{bmatrix}$. **(10 Marks)**

**4** a. Find the values of determinant and trace of the matrix :

$$A = \begin{bmatrix} 2 & 6 & 1 \\ 0 & 1 & 4 \\ -8 & 0 & -1 \end{bmatrix}.$$ **(05 Marks)**

b. Compute the singular value decomposition of a matrix :

$$A = \begin{bmatrix} 4 & 11 & 14 \\ 8 & 7 & -2 \end{bmatrix}.$$ **(15 Marks)**

## Module-3

**5** a. Compute the derivative of the function $h(x) = g[f(x)]$ where $g[f(x)] = [f(x)]^4$ and $f(x) = (2x + 1)$. **(06 Marks)**

b. Define gradient of the function $f(x_1, x_2)$ and hence find gradient of
$f(x_1, x_2) = x_1^2 x_2 + x_1 x_2^3$. **(06 Marks)**

c. With used notations write the identities which are used in computing gradients of :

i) $[f(x)]^T$    ii) $tr[f(x)]$    iii) $det[f(x)]$    iv) $[f(x)]^{-1}$ , with respect to the variable x. **(08 Marks)**

**OR**

**6** a. Starting from definition, find the derivative of $x^n$. **(08 Marks)**

b. Obtain the Maclaurin's series of $\sin x + \cos x$, hence draw the graphs of $f(x) = f(0)$,

$$f(x) = f'(0) + \frac{x}{1!} f(0) \text{ and } f(x) = f(0) + \frac{x}{1!} f'(0) + \frac{x^2}{2!} f''(0).$$ **(12 Marks)**

## Module-4

**7** a. State and prove Baye's theorem on conditional probability. **(08 Marks)**

b. Let A and B be two events, which are not mutually exclusive and are connected with random experiment. Given that $P(A) = 3/4$   $P(B) = 1/5$   $P(A \cap B) = 1/20$ then find: i) $P(A \cup B)$   ii) $P(A \cap \bar{B})$   iii) $P(\bar{A} \cap B)$   iv) $P(A/B)$ and $P(B/A)$. **(06 Marks)**

c. A random variable x has the following probability distribution:

| x | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|------|---|---|----|----|----|-----|-----|----------|
| P(x) | 0 | K | 2K | 2K | 3K | $K^2$ | $2K^2$ | $7K^2 + K$ |

Find : i) Value of K    ii) $P(x < 6)$    iii) $P(x \geq 6)$. **(06 Marks)**

**OR**

**8** a. Test whether the following function is a density function $f(x) = \begin{cases} e^{-x}, & x \geq 0 \\ 0, & x < 0 \end{cases}$ if so determine

the probability that the variate having its density function will fall in the interval $(1, 2)$. **(08 Marks)**

b. The length of the telephone conversation in a booth has been an exponential distribution and found on an average to be 5 minutes. Find the probability that a random call made from this booth i) Ends in less than 5 minutes    ii) Between 5 and 10 minutes. **(06 Marks)**

c. Define binomial distribution and find the binomial probability distribution which has mean 2 and variance 4/3. **(06 Marks)**

## Module-5

**9** a. Find the maximum of Z = 2x + 3y
subject to the constraints x + y ≤ 30,
y ≥ 30,
0 ≤ y ≥ 12,
x − y ≥ 0
and 0 ≤ x ≤ 20. **(10 Marks)**

b. For convex functions f(y) and g(x), show that
$$\min_{x} f(Ax) + g(x) = \min_{u} - f*(u) - g*(-A^{T}u).$$ **(10 Marks)**

**OR**

**10** a. Consider the linear program given below and derive the dual linear program using Lagrage duality.

$$\min_{x \in R^2} \frac{1}{2} \begin{bmatrix} x_1 \\ x_2 \end{bmatrix}^T \begin{bmatrix} 2 & 1 \\ 1 & 4 \end{bmatrix} \begin{bmatrix} x_1 \\ x_2 \end{bmatrix} + \begin{bmatrix} 5 \\ 3 \end{bmatrix}^T \begin{bmatrix} x_1 \\ x_2 \end{bmatrix}$$

$$\text{Subject to} \begin{bmatrix} 1 & 0 \\ -1 & 0 \\ 0 & 1 \\ 0 & -1 \end{bmatrix} \begin{bmatrix} x_1 \\ x_2 \end{bmatrix} \le \begin{bmatrix} 1 \\ 1 \\ 1 \\ 1 \end{bmatrix}.$$ **(10 Marks)**

b. Discuss the optimization using gradient descent, conjugate gradient, subgradient methods. Differential the methods if any. **(10 Marks)**

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**21AI54**

# Fifth Semester B.E./B.Tech. Degree Examination, Dec.2024/Jan.2025
## Principles of Artificial Intelligence

Time: 3 hrs.                                                                 Max. Marks: 100

*Note: Answer any FIVE full questions, choosing ONE full question from each module.*

### Module-1

**1** a. What are the four categories used to define Artificial Intelligence. Briefly explain each of them. **(10 Marks)**

b. What is an agent? How agent interacts with environment? Give few examples for agents. **(05 Marks)**

c. Write the PEAS description for automated taxi agent. **(05 Marks)**

### OR

**2** a. What is an intelligent agent? What are the different types of intelligent agent? Briefly explain each of them. **(10 Marks)**

b. Classify the environments based on their properties and characteristics. Briefly explain any five environments. **(10 Marks)**

### Module-2

**3** a. Define problem-solving agent. What is the primary objective of the problem-solving agents? **(07 Marks)**

b. Draw solution for vacuum cleaner world using state transition diagram. **(07 Marks)**

c. Write the general description of graph-search algorithms. **(06 Marks)**

### OR

**4** a. Explain any four uninformed search strategies provide examples to each of them. **(10 Marks)**

b. Write all the states of the tree to find out the path for the following Depth-First-Search tree with the initial node A and goal node M. [Refer Fig.Q4(b)]
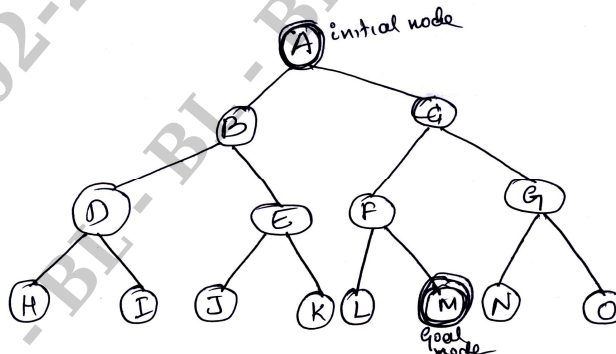


Fig.Q4(b)                                                                 **(05 Marks)**

c. Define infrastructures of search algorithms and also explain how to evaluate the performance of search algorithms. **(05 Marks)**

## Module-3

**5**  a.  Define Heuristic search strategies. Explain A$^*$ search with suitable example.  **(08 Marks)**

     b.  Explain Greedy Breadth First search, with an example.  **(08 Marks)**

     c.  Explain heuristic function with respect to 8-puzzle problem.  **(04 Marks)**

### OR

**6**  a.  Define the following :
(i) Knowledge base   (ii) Knowledge base agents   (iii) Levels of knowledge base agents.  **(07 Marks)**

     b.  Write the PEAS description for WUMPUS world task environment.  **(07 Marks)**

     c.  Define the following propositional logic:
(i) Syntax          (ii) Semantics  **(06 Marks)**

## Module-4

**7**  a.  Explain the symbols and interpretations of First Order Logic.  **(06 Marks)**

     b.  Explain the following with respect to first order logic:
(i) Terms     (ii) Atomic sentences    (iii) Complex sentences     (iv) Qualifiers  **(10 Marks)**

     c.  Define the sets, numbers and list with respect to first order logic.  **(04 Marks)**

### OR

**8**  a.  Explain the inference rule for qualifiers of inference in first order logic.  **(05 Marks)**

     b.  Define Unification and Lifting  **(08 Marks)**

     c.  Explain forward and backward chaining with example.  **(07 Marks)**

## Module-5

**9**  a.  Explain how the agent acting under uncertainty? Explain uncertainty for dental patient toothache diagnosis problem.  **(10 Marks)**

     b.  Discuss how uncertainty is modeled in WUMPUS world and how probabilistic reasoning enhances the decision making in such environments.  **(10 Marks)**

### OR

**10**  a.  State Baye's rule. Write the Baye's rule for multivalued variable.  **(05 Marks)**

      b.  Explain agents use the basic probability notations to handle uncertainty.  **(05 Marks)**

      c.  Briefly explain Full Joint Distribution.  **(05 Marks)**

      d.  With an example explain the events that are independent on probability calculations.  **(05 Marks)**

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## Sixth Semester B.E./B.Tech. Degree Examination, Dec.2024/Jan.2025
## Machine Learning

Time: 3 hrs.

Max. Marks: 100

*Note: Answer any FIVE full questions, choosing ONE full question from each module.*

### Module-1

1  a. Define Machine Learning. Explain different types of Machine Learning.  **(10 Marks)**
   b. Write the Final Version Space for the below mentioned training example using candidate elimination algorithm.

| Example | Sky | Air Temp | Humidity | Wind | Water | Forecast | Enjoy Sport |
|---------|------|----------|----------|--------|-------|----------|-------------|
| 1 | Sunny | Warm | Normal | Strong | Warm | Same | Yes |
| 2 | Sunny | Warm | High | Strong | Warm | Same | Yes |
| 3 | Rainy | Cold | High | Strong | Warm | Change | No |
| 4 | Sunny | Warm | High | Strong | Cool | Change | Yes |

**(10 Marks)**

### OR

2  a. List and explain main challenges of Machine Learning.  **(06 Marks)**
   b. State the following problem with respect to task performance and experiences:
      (i) A Checkers Learning problem  (ii) A Robot driving learning problem  **(04 Marks)**
   c. Demonstrate Find-S algorithm for finding a maximally specific hypothesis on the given dataset.

| Origin | Manufacture | Color | Year | Type | Class |
|--------|-------------|-------|------|---------|-------|
| Japan | Honda | Blue | 1980 | Economy | Yes |
| Japan | Toyota | Green | 1970 | Sport | No |
| Japan | Toyota | Blue | 1990 | Economy | Yes |
| USA | Audi | Red | 1980 | Economy | No |
| Japan | Honda | White | 1980 | Economy | Yes |
| Japan | Toyota | Green | 1980 | Economy | Yes |
| Japan | Honda | Red | 1980 | Economy | No |

**(10 Marks)**

### Module-2

3  a. Explain the following :
      (i)  Root Mean Square-Error (RMSE)  (ii)  Mean Absolute Error (MAE)  **(04 Marks)**
   b. In context to prepare the data for machine learning algorithm. Write a short note on
      (i)  Data Cleaning  (ii) Handling text and categorical attribute  **(06 Marks)**
   c. With the code snippets show how grid search and randomized search helps in fine tuning a model.  **(10 Marks)**

### OR

4  a. Using the code snippets, outline the concepts involved in :
      (i)  Measuring accuracy using cross-validation
      (ii)  Confusion Matrix
      (iii) Precision and Recall.  **(10 Marks)**

   b. Explain the following :
      (i) Multiclass classification
      (ii) Multilabel classification
      (iii) Multioutput classification
      (iv) Confusion Matrix                                    **(10 Marks)**

## Module-3

**5** a. What is gradient Descent Algorithm and discuss its various types.   **(10 Marks)**
   b. In Regularized linear models illustrate the three different methods to constrain the weights.
                                                              **(10 Marks)**

**OR**

**6** a. With respect to nonlinear SVM classification, explain polynomial kernel, Gaussian RBF kernel along with code snippet.                             **(10 Marks)**
   b. Show that how SVM's make predictions using quadratic programming and kernelized SVM.
                                                                **(10 Marks)**

## Module-4

**7** a. With an example dataset examine how Decision Tree are used in making predictions.
                                                              **(10 Marks)**
   b. Explain the CART training algorithm.                                       **(06 Marks)**
   c. Explain the features of regression and instability with respect to decision trees.    **(04 Marks)**

**OR**

**8** a. In context to Ensemble methods determine the concept of :
      (i) Bagging and pasting       (ii) Voting classifiers                     **(10 Marks)**
   b. Explain the following boosting methods along with code snippets:
      (i) Ada.Boost      (ii) Gradient Boosting                         **(10 Marks)**

## Module-5

**9** a. Write Bayes theorem. Identify the relationship between Bayes theorem and the problem of concept learning.                                           **(10 Marks)**
   b. How maximum likelihood hypothesis is helpful for predicting probabilities.    **(10 Marks)**

**OR**

**10** a. Construct Naive Bayes classifier with an example.                               **(10 Marks)**
   b. Derive the EM algorithm in detail.                                           **(10 Marks)**

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# CBCS SCHEME

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## Sixth Semester B.E./B.Tech. Degree Examination, Dec.2024/Jan.2025
## Business Intelligence

Time: 3 hrs.                                                                 Max. Marks: 100

*Note: Answer any FIVE full questions, choosing ONE full question from each module.*

### Module-1

**1** a. Explain four step decision making process adopted by managers. **(06 Marks)**
   b. Describe why to use computerized Decision Support Systems (DSS). **(07 Marks)**
   c. Define Business Intelligence (BI) and with a diagram discuss a High-Level Architecture of BI along with its components. **(07 Marks)**

### OR

**2** a. Explain a decision support framework by Gory and Scott-Morten. **(06 Marks)**
   b. Discuss computer support for structured, unstructured and semi-structured decisions. **(07 Marks)**
   c. Define Decision Support Systems (DSS) and with a diagram discuss a High Level Architecture of DSS along with its components. **(07 Marks)**

### Module-2

**3** a. Define Decision Making and describe characteristics of Decision Making. **(04 Marks)**
   b. Define Model and illustrate the four Decision-Making Models and benefits of models. **(08 Marks)**
   c. Explain Simon's Four Phases of Decision Making. **(08 Marks)**

### OR

**4** a. With neat diagram, illustrate the components of Decision Support Mathematical Models. **(06 Marks)**
   b. In the context of Decision Making, discuss multiple goals, sensitivity analysis, what-if analysis, and goal seeking. **(06 Marks)**
   c. With a diagram, explain decision-making modeling process. **(08 Marks)**

### Module-3

**5** a. Define data warehouse and discuss characteristics of data warehousing. **(06 Marks)**
   b. With diagrams, in brief illustrate data warehousing architectures. **(06 Marks)**
   c. With neat diagram, illustrate data warehouse framework and views. **(08 Marks)**

### OR

**6** a. Explain the Inmon and the Kimball models for data warehouse development approaches. **(08 Marks)**
   b. Describe Extraction, Transformation and Load (ETL) Process with diagram. **(08 Marks)**
   c. Distinguish between Data Mart, Operational Data Stores (ODS) and Enterprise Data Warehouses (EDW). **(04 Marks)**

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## Module-4

**7** a. Define knowledge and with diagram depict relationships among data, information and knowledge. Also discuss characteristics of knowledge. **(08 Marks)**

 b. Distinguish between explicit knowledge and tacit knowledge. **(04 Marks)**

 c. Explain the two fundamental approaches to knowledge management. **(08 Marks)**

### OR

**8** a. Explain Knowledge Management System (KMS) cycle with neat diagram. **(08 Marks)**

 b. Describe how AI and intelligent agents support knowledge management. **(06 Marks)**

 c. Write a note on knowledge management systems implementation. **(06 Marks)**

## Module-5

**9** a. Define Expert Systems (ES) and explain the features of ES. **(06 Marks)**

 b. List applications of Expert Systems (ES). **(06 Marks)**

 c. With a neat diagram, illustrate structure/architecture of an expert system. **(08 Marks)**

### OR

**10** a. Define knowledge engineering. Discuss five major activities in knowledge engineering. **(06 Marks)**

 b. Write a note on problem areas suitable for expert systems. **(06 Marks)**

 c. Describe the critical success factors of Expert Systems (ES). **(08 Marks)**

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# Seventh Semester B.E./B.Tech. Degree Examination, Dec.2024/Jan.2025
## Advanced AI and ML

Time: 3 hrs.                                                      Max. Marks: 100

*Note: Answer any FIVE full questions, choosing ONE full question from each module.*

## Module-1

**1**  a. Define AI. Explain the foundation of AI in detail.                     **(10 Marks)**
    b. Explain history of AI in detail.                                          **(10 Marks)**

**OR**

**2**  a. Briefly explain the properties of task environment.                    **(10 Marks)**
    b. Explain the following with respect to structure of agents:
       i)   Simple reflex agents
       ii)  Model based reflex agents
       iii) Utility based agents                                                 **(10 Marks)**

## Module-2

**3**  a. What is decision theory? Describe the decision theoretic agent that selects rational actions.
                                                                                 **(10 Marks)**
    b. What is Baye's rule? Explain with a relevant example.                     **(10 Marks)**

**OR**

**4**  a. Explain the following with examples:
       i)   Kolmogorov's axioms
       ii)  Inclusion – Exclusion principle
       iii) Probability density function
       iv)  Joint Probability distribution
       v)   Independence                                                         **(10 Marks)**
    b. Prove that probabilistic agent can perform better than logical agent by concept of wumpus world.                                                          **(10 Marks)**

## Module-3

**5**  a. Define perceptrons. How the perceptrons are represented? Explain perceptron training rule.
                                                                                 **(08 Marks)**
    b. Derive the gradient descent rule.                                         **(08 Marks)**
    c. Write the stochastic gradient descent version of the BACKPROPAGATION algorithm for feedforward network containing 2 layers of sigmoid units.              **(04 Marks)**

**OR**

**6**  a. Write the prototypical genetic algorithm.                             **(05 Marks)**
    b. Explain the different operators with relevant bit strings.               **(06 Marks)**
    c. Illustrate program tree representation in genetic programming. Explain block stacking problem.                                                             **(09 Marks)**

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## Module-4

**7**  a. What is association rule mining? Explain support, confidence and lift.  **(10 Marks)**
    b. What is collaborative filtering? Explain the types.  **(10 Marks)**

**OR**

**8**  a. What is BOW model? What are the 3 ways to identify the importance of words in BOW model?  **(08 Marks)**
    b. Explain Naïve – Baye's model for sentiment classification.  **(08 Marks)**
    c. Brief stemming and lemmatization process.  **(04 Marks)**

## Module-5

**9**  a. Define Clustering. What are the different types of clustering?  **(06 Marks)**
    b. Explain k-medoids clustering with relevant example.  **(08 Marks)**
    c. Write the k-nearest neighbor algorithm using voronoi diagram.  **(06 Marks)**

**OR**

**10**  a. Explain distance weighted Nearest neighbor algorithm.  **(05 Marks)**
     b. Derive and explain locally weighted Linear Regression.  **(10 Marks)**
     c. Briefly explain radial basis funciton.  **(05 Marks)**

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## Seventh Semester B.E./B.Tech. Degree Examination, Dec.2024/Jan.2025
## Full Stack Development

Time: 3 hrs.                                                      Max. Marks: 100

**Note:** *Answer any FIVE full questions, choosing ONE full question from each module.*

### Module-1

**1**  a. Define Web Framework. Explain the difference between Django and CGI with example.
**(10 Marks)**
   b. Develop Django application to display current date and time after one hour. **(10 Marks)**

**OR**

**2**  a. Explain MVC design pattern. How does django implement this pattern? **(10 Marks)**
   b. Develop a django application to display square of any two given numbers consisting of exactly three digits. **(10 Marks)**

### Module-2

**3**  a. Explain any five django tags with example. **(10 Marks)**
   b. Develop a layout.html with any header and footer information. Inherit layout.html to create two additional web pages Home.html and contact.html. Display message "welcome to home page" on home.html and "contact me" on contact.html. **(10 Marks)**

**OR**

**4**  a. Explain inserting and selecting data from table in django with example. Discuss all the necessary steps to create application and table. **(10 Marks)**
   b. Develop django application to create a table member with the attributes firstname, lastname and insert three instances to the table. Display the second and third row values in the table.
**(10 Marks)**

### Module-3

**5**  a. Develop a model student and course. Illustrate data entry through admin interface. **(10 Marks)**
   b. Explain creating feedback form and processing submission. **(10 Marks)**

**OR**

**6**  a. List and explain URL conf Tricks. **(10 Marks)**
   b. Develop a model "authors" with the attributes firstname, lastname and email. Illustrate customizing admin interface. **(10 Marks)**

### Module-4

**7**  a. Define Generic views and explain its types. **(10 Marks)**
   b. For student's enrollment, develop a generic class view which display list of students and detail view that displays student detail for any selected students in the list. **(10 Marks)**

**OR**

**8**  a. Explain extending Generic views. **(10 Marks)**
   b. What is MIME and discuss its types. **(10 Marks)**

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## Module-5

**9** a. Discuss the setting of Javascript in Django. **(10 Marks)**

b. Develop a search application in Django using AJAX that display courses enrolled by a student being searched. **(10 Marks)**

**OR**

**10** a. List and explain the technologies AJAX is overlaid on. **(10 Marks)**

b. Explain XHTML Http request and response. **(10 Marks)**

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