PG/IIIS/MCA/398(A & B)/24
(Pr.)

MCA 3rd Semester Examination, 2024

MCA

(Practical)

PAPER — MCA-398 (A & B)

Full Marks : 100

Time : 2 hours

Answer any **one** question on a **lottery** basis

The figures in the right hand margin indicate marks

PAPER — MCA-398 (A)

(*Internet and Web Technology Lab*)

[*Marks* : 50]

Answer any **one** question : 35 × 1

1. Design a web page to receive name and subject of students.

2. Design a simple webpage to add one data in a database.

3. Create a Contact Us webpage with fields Email and Message.

4. Design a webpage to add two numbers submitted through separate textbox.

5. Design a form with at least three different fields to submit data in another webpage.

6. Create a webpage using external CSS to show information present in a page.

7. Design a web page to allow listing of details of members of a Committee in a tabular form.

8. Design a webpage to show the use of COOKIES in PHP.

9. Design a webpage to show the use of SESSION in PHP.

10. Create a simple web page to input the following information and store it in the database. Create the database.

- Username : Textbox
- Subject : Checkbox, Options : English, Hindi, Bengali, Oriya
- Birthyear : Combo Box

11. Design a web page to submit grievances to the administrator.

12. Design a webpage to upload a file with basic details of an uploader.

13. Create a webpage in PHP to access and display the salary of an employee from a database table.
(User need to create a dummy table).

Viva voce   — 10

PNB   — 05

(4)

PAPER — MCA-398 (B)

(Machine Learning Lab)

[*Marks* : 50]

Answer any **one** question on **lottery** basis :

35 × 1

Write source code and input-output for each of the program.

1. Load a real-world dataset (e.g., from Kaggle or UCI Machine Learning Repository) for predicting a continuous variable. Implement **Linear Regression**, evaluate the model using R^2 score and Mean Squared Error (MSE) and plot the predicted *vs.* actual values.

2. Use the **Pima Indians Diabetes Dataset** (available on Kaggle) to train a **Logistic Regression** model. Evaluate the model using metrics like accuracy, precision, recall and F1-score.

(*Continued*)

3. Write a program in Python to implement KNN algorithm with Iris dataset.

4. Implement decision tree algorithm with Play golf dataset using Python programming language.

5. Perform **Principal Component Analysis (PCA)** on the **Wine Dataset** (sklearn.datasets) to reduce its dimensionality. Visualize the data in a 2D scatter plot using the first two principal components and evaluate how dimensionality reduction affects model performance.

6. Train an **SVM Classifier** on the **Breast Cancer Dataset** (sklearn.datasets). Compare the performance of different kernels (linear, polynomial, RBF) using cross-validation.

(Turn Over)

7. Use the **Heart Disease Dataset** (available online) to train a **Random Forest Classifier**. Tune the number of estimators and max depth using Grid Search or Random Search and compare its performance with a single Decision Tree.

8. Write a program in python jupyter notebook to implement the knn classification algorithm, import all necessary packages and load a data in .csv form either from url or from sklearn datasets. Split the datasets in 70% as training and 30% as test. Find the accuracy of your model.

9. Write a program in python jupyter notebook to implement the simple linear regression model for the data points $x = [0, 1, 2, 3, 4, 5, 6, 7, 8, 9]$ and $y = [10, 30, 35, 50, 75, 80, 85, 90, 105, 125]$. Find the coefficients and plot the data values with best fit line.

(*Continued*)

10. Write a program in python jupyter notebook to implement the k-means clustering algorithm, import all necessary packages and load a data in .csv form either from url or from sklearn datasets. Find the accuracy of your model.

11. Write a program in python jupyter notebook to implement the Naive Bayes classification algorithm, import all necessary packages and load a data in .csv form either from url or from sklearn datasets. Split the datasets in 75% as training and 25% as test. Find the accuracy of your model.

12. Write a program in python jupyter notebook to implement the cross-validation training in any classification algorithm, import all necessary packages and load a data in .csv form either from url or from sklearn datasets. Find the accuracy of your model.

13. Implement **Polynomial Regression** on a synthetic dataset to demonstrate how it handles non-linear relationships. Visualize the fitted curve.

Viva voce — 10

Laboratory Notebook — 05