May - June - 2024

Roll No. | | | | | | | | | | |

Total No. of Questions : 09

Total No. of Pages : 03

MCA (Sem.–4)

MACHINE LEARNING AND DATA ANALYTICS USING PYTHON

Subject Code : PGCA-1976

M.Code : 91855

Date of Examination : 07-05-2024

Time : 3 Hrs.

Max. Marks : 70

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION - B & C have FOUR questions each.
3. Attempt any FIVE questions from SECTION B & C carrying TEN marks each.
4. Select atleast TWO questions from SECTION - B & C.

SECTION-A

1. **Answer Briefly :**

   a) When to apply linear regression?

   b) Write the loss function for multiple linear regression.

   c) How to do multiclass classification using logistic regression?

   d) Name a method used in choosing the value of K in KNN.

   e) What are the criteria for choosing a root in a decision tree?

   f) Why do we use the dot (.) operator in python?

   g) What are various datatypes in Python?

   h) When do we need NumPy?

   i) Write two advantages of using PCA.

   j) What is supervised learning? Explain with an example.

SECTION-B

2. a) Explain the working of Decision Trees.

   b) What are the advantages of random forests over decision trees?

3. a) Explain PCA in detail using eigen values and eigen vectors.

   b) *Logistic regression does work of classification.* Discuss.

4. a) What are neural networks? When do we use them?

   b) What are the various hyperparameters needed for neural networks?

5. Consider the following training set that classifies the output variable play tennis as Yes or No depending upon weather conditions such as Outlook, Temperature, Humidity, and Windy Status.

S. No.	Outlook	Temperature	Humidity	Windy	Play Tennis
1	Sunny	Hot	High	Weak	No
2	Sunny	Hot	High	Strong	No
3	Overcast	Hot	High	Weak	Yes
4	Rainy	Mild	High	Weak	Yes
5	Rainy	Cool	Normal	Weak	Yes
6	Rainy	Cool	Normal	Strong	No
7	Overcast	Cool	Normal	Strong	Yes
8	Sunny	Mild	High	Weak	No
9	Sunny	Cool	Normal	Weak	Yes
10	Rainy	Mild	Normal	Weak	Yes
11	Sunny	Mild	Normal	Strong	Yes
12	Overcast	Mild	High	Strong	Yes
13	Overcast	Hot	Normal	Weak	Yes
14	Rainy	Mild	High	Strong	No

Using Naive Bayes Classifier, classify whether, on a Sunny, Cool, Normal Humidity, and Weak Windy day, we can play tennis or not.

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SECTION-C

6. Write Python code for printing the first N Fibonacci series values.

7. a) What are the various functionalities of Pandas library for handling CSV files and manipulating them? Discuss in detail.

   b) What is the difference between a series and a list? Explain using examples.

8. a) Explain the usage of the Matplotlib library using examples.

   b) Write the matplotlib command for generating histograms and pie charts.

9. a) What are the various techniques for handling missing data?

   b) Discuss how to do data input and output in Pandas.

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Total No. of Pages : 02

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MCA (Sem.–4)

ADVANCED WEB TECHNOLOGIES

Subject Code : PGCA1958

M.Code : 91856

Date of Examination : 13-05-2024

Time : 3 Hrs.

Max. Marks : 70

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION - B & C have FOUR questions each.
3. Attempt any FIVE questions from SECTION B & C carrying TEN marks each.
4. Select atleast TWO questions from SECTION - B & C.

SECTION-A

1. **Answer the following questions briefly :**

   i) What is server side scripting?

   ii) How arrays are used in PHP?

   iii) Why we use cookies?

   iv) What is CMS?

   v) Write a short note on NPM.

   vi) What are regular expressions?

   vii) What are advantages of AJAX?

   viii) What are the disadvantages of using xml?

   ix) What is a breadcrumb in Bootstrap?

   x) What are the component of API?

SECTION-B

2. What are the various constants predefined in PHP? What is the use of the constant() function in PHP?

3. **Differentiate between following using example :**

   i) FLOAT and DOUBLE

   ii) CHAR_LENGTH and LENGTH.

4. How sessions are maintained in PHP? Also, highlight the importance of cookies.

5. What are the various types of CMS? Discuss alongwith its usage and benefits.

SECTION-C

6. Discuss various components of Bootstrap in detail.

7. How XML is different from HTML? What is XML DOM?

8. How is jQuery different from other Javascript frameworks? List down any four features of jQuery.

9. What is the difference between synchronous and asynchronous requests in AJAX? Explain with an example.

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