TE/INFT/SEM-VI/C-2019/DEC. 2023

(3 Hours) [Total Marks: 80]

NOTE:
1. Question No 1 is compulsory
2. Attempt any three questions from remaining.
3. Assume suitable data if necessary and state the same.

| | | |
|---|---|---|
| Q.1 A) | Explain types of attributes used in data exploration | (10) |
| B) | Explain DBSCAN algorithm with example. | (10) |

| | | |
|---|---|---|
| Q.2 A) | Explain K means algorithm in detail. Apply K-means Algorithm to divide the given set of values {2,3,6,8,9,12,15,18,22} into 3 clusters | (10) |
| B) | Compare Bagging and Boosting of a classifier | (10) |

| | | |
|---|---|---|
| Q.3 A) | Explain Multilevel and Multidimensional Association rules with suitable examples | (10) |
| B) | Using the given training dataset classify the following tuple using Naïve Bayes Algorithm: <Homeowner: No, Marital Status: Married, Job experience:3> | (10) |

| Homeowner | Marital Status | Job experience (in years) | Defaulted |
|---|---|---|---|
| Yes | Single | 3 | No |
| No | Married | 4 | No |
| No | Single | 5 | No |
| Yes | Married | 4 | No |
| No | Divorced | 2 | Yes |
| No | Married | 4 | No |
| Yes | Divorced | 2 | No |
| No | Married | 3 | Yes |
| No | Married | 3 | No |
| Yes | Single | 2 | Yes |

| | | |
|---|---|---|
| Q.4 A) | Define data mining. Explain KDD process with help of a suitable diagram | (10) |
| B) | For the table given perform Apriori algorithm and show frequent item set and strong association rules. Assume Minimum Support of 30% and Minimum confidence of 70%. | (10) |

| TID | Items |
|---|---|
| 01 | 1, 3, 4, 6 |
| 02 | 2, 3, 5, 7 |
| 03 | 1, 2, 3, 5, 8 |
| 04 | 2, 5, 9, 10 |
| 05 | 1, 4 |

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Q.P. CODE

Paper / Subject Code: 37311 / Data Mining & Business Intelligence

Q.5 A) What is noisy data? How to handle it **(10)**
For the following data D={4,8,9,15,21,21,24,25,26,28,29,34}
Number of bins =3
Perform the following:
   i.    Partition into equal frequency bins
   ii.   *Smoothing by bin means*
   iii.  Smoothing by bin boundaries

  B) Define data warehouse. Explain data warehouse architecture with help of a diagram **(10)**

Q.6 A) What is an outlier? List types of outliers. Describe methods used for outlier analysis. **(10)**

  B) Design BI system for Fraud Detection? Explain all steps from data collection to decision making **(10)**

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TE/sem-VI/INFT/(C-2019)/Dec-2023.

(3 hrs.)                                            Maximum Marks = 80

NB:

1. Question No. 1 is compulsory and solve any THREE questions from remaining questions
2. Assume suitable data if necessary
3. Draw clean and neat diagrams

| Q1. | | Attempt any 4 | Marks |
|---|---|---|---|
| | a. | Explain Multilevel Inheritance in Typescript with suitable example | 5 |
| | b. | Illustrate AngularJS custom directives with an example | 5 |
| | c. | Explain Characteristics of Semantic .Web | 5 |
| | d. | What are the features of Python Flask? | 5 |
| | e. | Differentiate between CMS and Framework | 5 |
| Q2. | a. | Explain controllers in Angular JS with example | 10 |
| | b. | Explain MongoDB Data Types along with syntax. | 10 |
| Q3. | a. | Compare and contrast Web 1.0, Web 2.0 and Web 3.0 | 10 |
| | b | Explain Routing using ng-Route, ng-Repeat, ng-style, ng-view. With suitable example | 10 |
| Q4 | a. | Define RIA and explain characteristics of RIA | 10 |
| | b. | Differentiate Var v/s Let. In addition, Explain function overloading with suitable examples. | 10 |
| Q5 | a. | Explain MongoDB CRUD Operations with an example. | 10 |
| | b. | How to set access and delete cookies in Python Flask? | 10 |
| Q6 | a. | Explain features and Working of AJAX | 10 |
| | b. | Explain AngularJS $http service in detail with its get() and post() methods. | 10 |

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G.P. Code
**42356**

**Paper / Subject Code: 37313 / Wireless Technology**

Time: 3 HRS                                                                    Marks: 80

Note: 1. Q. No1 is compulsory
      2. Solve any three questions out of the remaining   five
      3. Figures to right indicate full marks
      4. Assume suitable data where necessary

Q.No1    Solve any four                        (20)
    a) Explain the difference between an Infrastructures based Network and an Adhoc Network
       of WLAN
    b) Explain Direct Sequence Spread Spectrum
    c) Compare FDMA, TDMA and CDMA
    d) Outline the method that supports mobility in CISCO Unified Wireless Network
    e) State the features of Wi-MAX

2
a.  Draw and explain 4G architecture   with its specifications.        (10)
b.  Explain in detail  GSM   Architecture   with neat diagram      (10)

3. a. Give the significance of WEP protocols. What are the features of WPA2    (10)

   b. Draw and explain Cisco UWN lightweight AP and WLC Operation.    (10)

4. a.  What are the various challenges in WSN and explain the architecture of WSN    (10)

   b. What do you mean by massive MIMO; Compare 1G- 5G mobile standards.    (10)

5
 a. Explain Zigbee protocol stack                    (10)
 b. Give the Features of   VANET , E-VANET and MANET      (10)

6

a. Explain UMTS and GSM security                  (10)

b  Draw and explain IEEE 802.11 Architecture          (10)

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Q.P.code

42231

TE | Sem -VI | INFT | C-2019 | Dec-2023

**Duration: 3hrs** [Max Marks:80]

N.B. : (1) Question No 1 is Compulsory.
(2) Attempt any three questions out of the remaining five.
(3) All questions carry equal marks.
(4) Assume suitable data, if required and state it clearly.

1    Attempt any FOUR [20]
   a   Write comparison between Business Intelligence and Data Science
   b   What is rational agent? Explain with diagram.
   c   Explain what role is played by Correlation and Covariance in EDA?
   d   What are heuristic functions? Where are they used?
   e   What is Unification? Give example
   f   What is Skolemization? Explain Skolem constant and Skolem function

2 a   Write a detailed note on Hypothesis Testing. What are type I and type II errors? [10]
   b   The law says that it is a crime for an American to sell weapons to [10]
hostile nations. The country Nono, an enemy of America, has some
missiles, and all of its missiles were sold to it by Colonel West, who is
American.
Prove that Col. West is a criminal!

3 a   Explain uniform cost search and best first search in detail with examples and [10]
compare.
   b   Explain various stages in the Data analytics Lifecycle. [10]

4 a   Explain SVM in detail. [10]
   b   Describe PEAS and also write down the PEAS representations for Medical [10]
diagnosis system.

5 a   Write in detail issues in machine learning. [10]
   ·b   Elaborate in detail the steps in developing a Machine Learning application with [10]
architectural diagram.

Q·P·code
28438

6  a. What are the different planning techniques? Explain with example. · [10]

b  What do you mean by covariance and correlation? Explain the range of [10]
coefficients of correlation and covariance. Calculate COV(Observed Value1,
Observed Value2) and CORRCOV(Observed Value1, Observed Value2) for
following data. How do you interpret these values?

| Experiment No | Observed Value1 | Observed Value2 | Experiment No | Observed Value1 | Observed Value2 |
|---|---|---|---|---|---|
| 1 | 38 | 20 | 9 | 80 | 9 |
| 2 | 62 | 15 | 10 | 32 | 22 |
| 3 | 22 | 30 | 11 | 51 | 20 |
| 4 | 38 | 21 | 12 | 56 | 19 |
| 5 | 45 | 18 | 13 | 21 | 28 |
| 6 | 69 | 12 | 14 | 34 | 23 |
| 7 | 75 | 14 | 15 | 76 | 14 |
| 8 | 38 | 28 | | | |

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**Paper / Subject Code: 37318 / Ethical Hacking and Forensic (DLOC -II)**

(3 Hours)                                                                                    **Total Marks: 80**

N.B.: (1) Question No.1 is compulsory.

(2) Attempt any three questions from the remaining five questions.

(3) Make suitable assumptions wherever necessary but justify your assumptions.

1.  (a) Explain Mobile forensic. What are various challenges in mobile forensics          05

    (b) Explain Forensic Duplicates as Admissible Evidence.                               05

    (c) What is evidence handling procedure?                                              05

    (d) What are Challenges in network forensics ?                                        05

2.  (a) Explain Incident Response Process and its methodology.                            10

    (b) Compare active attacks vs Passive attacks. Classify the cybercrimes and explain any   10
    one briefly.

3.  (a) Discuss basic security precautions to be taken to safeguard Laptops and wireless  10
    devices and What are the devices related to security issues?

    (b) Explain Volatile Data Collection from Windows system                              10

4.  (a) What do you understand by social engineering? Give classification                 10

    (b) Briefly explain Types of digital Evidence with examples.                          10

5.  (a) Explain process for collecting Network Based Evidence.                            10

    (b) Explain various guidelines for digital forensic report writing along with its goals.   10

6.  Write a short note on (Any Two)                                                       20

    (1) Tools used in network forensics

    (2) Roles of CSIRT in handling incident

    (3) Email Tracing- Internet Fraud

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Q.P.code.

**42944**

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