Exam Code: **114003**   Paper Code: 3302
(20)

Programme: Bachelor of Vocation (Artificial Intelligence and Data Science)
Semester-III

Course Title: Statistical Inference-I

Course Code: BVIL-3111

Time Allowed: 3 Hours   Max Marks: 60

NOTE: - Attempt five questions selecting at least one question from each section, fifth question may be attempted from any section. All questions carry equal marks (12 each)

Section A

1. Explain marginal probability distribution with suitable examples. (12)
2. A random Variable 'X' has the following probability function:

X	0	1	2	3	4	5	6	7
P(X)	0	k	2k	3k	3k	K^2	$2k^2$	$7k^2+k$

   a. Find the value of k
   b. Evaluate P(X>=6), P(6<X<5) and P(X<6)

(12)

2124   Page 1

Section B

3. Discuss the Central limit theorem with an example.

(12)

4. Explain mathematical expectations and moments?

(12)

Section C

5. Write a note on: (3*4)
   a. Poisson Distribution
   b. Normal Distribution
   c. Binomial Distribution

6. Explain continuous Probability Distribution and its types.

(12)

Section D

7. What are the estimators? Explain its types in detail.

(12)

8. Discuss the distribution of sample mean and variance with an example. (12)

Exam Code: **114003**   Paper Code: 3303
          (20)

Programme: Bachelor of Vocation (Artificial Intelligence
and Data Science)
Semester-III

Course Title: Data Mining and Data Warehousing

Course Code: BVIL-3112

Time Allowed: 3 Hours   Max Marks: 60

Note: **Attempt Five questions in total by selecting four
questions (one question from each of the four sections A-D)
and fifth question from any section. Each question carries 12
marks.**

Section A

1. Define the term Data Mining. Explain its various
   applications and issues in the field of information
   retrieval.   (12)
2. Exemplify the working of web search engines in detail.
                                                   (12)

Section B

3. Discuss the following Classification algorithms:

---

a) k-nearest neighbour (6)

b) city block distance (6)

4. Define Association mining with suitable examples.

(12)

Section C

5. Discuss the following:

a) Benefits of Data warehousing (6)

b) Problems of Data warehousing (6)

6. Explain the 3-tier architecture of Data Warehouse with diagram. (12)

Section D

7. Explain Host based and LAN based Data warehouses.

(12)

8. Discuss the various tools and technologies of Data warehouse. (12)

Exam Code: **114003**   Paper Code: 3304
(20)

Programme: Bachelor of Vocation (Artificial Intelligence
and Data Science)
Semester-III

Course Title: Data Processing and Visualization

Course Code: BVIL-3113

Time Allowed: 3 Hours   Max Marks: 40

Note: Attempt five questions selecting at least one from each
section. Each question carries 8 marks. Fifth question can be
attempted from any section.

SECTION-A

1. Explain various steps involved in data processing cycle?
   Give appropriate example.
2. What are the major functions of data processing?
   Explain in detail.

SECTION-B

3. Explain in detail
   (a) Real time processing

(b) Distributed Processing

4. Explain in detail
   (a) Manual Data Processing
   (b) Mechanical Data Processing

SECTION-C

5. What is Data Visualization? Explain its importance.
6. What are various goals of Data Visualization? How pattern recognition is done in large data sets?

SECTION-D

7. Discuss any four Basic Visualization tools with examples.
8. How you use Waffle Chart tool for Advanced Visualization? Explain it based on MS-Excel.

Exam Code: 114003   Paper Code: 3305

Programme: Bachelor of Vocation (Artificial Intelligence and Data Science) Semester-III
Course Title: Workplace Management
Course Code: BVIL-3114

Time Allowed: 3 Hours   Maximum Marks: 60

Note: Attempt five questions, selecting one question from each section. The fifth question may be attempted from any section. All questions carry 12 marks.

Section A

1. While writing a professional email what email etiquettes one must observe for meaningful communication.

2. In a professional setup what one must take care in the following situation:-
   a) Expressing Regret
   b) Expressing Gratitude

Section B

3. How can visual aid be used to enhance a presentation. Discuss.

4. How can one interact and address audience queries effectively during or after the presentation?

Section C

5. As a Data Analyst/AI expert, what other skills in addition to technical skillset you must have to survive and thrive in the company for the long run.

6. What can be done to ensure effective and smooth working with colleagues at workplace?

Section D

7. While appearing for an interview in company, what kind of wardrobe choices are apt and what must be avoided. Discuss.

8. What kind of conduct or behaviour reflects confidence and Self-esteem in an individual in Professional Scenario?

Exam Code: **114003**   Paper Code: 3306
   (20)

Programme: Bachelor of Vocation (Artificial Intelligence
and Data Science)
Semester-III

Course Title: Machine Learning-I

Course Code: BVIL-3115

Time Allowed: 3 Hours   Max Marks: 40

Note: Attempt five questions, selecting one question from
each section. The fifth question may be attempted from any
section. All questions carry equal (8) marks.

(Section A)

1. What is machine learning? Discuss various machine
   learning techniques.   (8)
2. Explain:-
   a) Inductive bias
   b) Boolean Algebra   (2X4=8)

(Section B)

3. What is regularization? Explain various methods related
   to it.   (8)

2124   Page 1

4. a) Explain relationship between covariance and linear regression.

   b) Explain categorical variables in regression.

   (2X4=8)

(Section C)

5. Explain various distance measures. How these are used for performing clustering? Discuss various distance measure based clustering methods. (8)

6. Explain various classification techniques. (8)

(Section D)

7. Explain Random Forest Algorithm for machine learning with appropriate examples. (8)

8. What is Markov decision process? Explain in detail. (8)