

**Exam Code:114003**

**Paper Code: 3315**

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: Candidates are required to attempt five questions in all, selecting at least one from each section. The fifth question may be attempted from any section. Each question carries equal (12) marks.**

**Section A**

- Q1 a) : Explain two dimensional random variables with example. (8)
- b) Write the importance of Cumulative distribution function. (4)
- Q2: Write joint, marginal and conditional distributions with examples. (12)

**Section B**

- Q3: Explain moment generating function with its properties in detail. (12)
- Q4: a) Elaborate Laplace theorem in detail. (8)
- b) Write application of Chebyshev's inequality. (4)

**Section C**

- Q5: Explain Binomial, Poisson and Geometric probability distributions with examples . (12)
- Q6: What are various continuous probability distributions available? Explain each one of them. (12)

**Section D**

- Q7: What do you understand by Estimator? Explain its types. (12)
- Q8: Write brief note on the following: (4\*3 = 12)
- a) Mean
  - b) Variance
  - c) Chi-square distribution
  - d) Sample distribution

**Exam Code: 114003**

**Paper Code: 3316**

**PROGAMME: 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**

**M. Marks: 60**

Note: Attempt five questions in all, selecting at least one question from each section, fifth question may be attempted from any section. Each question carries equal marks (12).

**SECTION A**

Q.1. What is Data Mining? Explain Knowledge Discovery Process in detail. (12)

Q.2. Explain the following terms:

(a) Web Search Engines

(b) Frequent Pattern Mining (2x6)

**SECTION B**

Q.3. What do you know about Data Mining Techniques? Explain Classification in detail. (12)

Q.4. What is the use of Apriori Algorithm? Explain the working of Apriori Algorithm on any dataset of your choice. (12)

**SECTION C**

Q.5. Explain various types of OLAP Servers, illustrating the benefits & limitations of each. (12)

Q.6. Explain Three Tier Architecture of Data Warehouse. (12)

**SECTION D**

Q.7. Compare and contrast Host based, single stage, LAN based Data Warehouse. (12)

Q.8. What are the most efficient tools used for implementation of Data Warehouses. (12)

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Paper Code: 3317

**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 in all, selecting at least one question from each section., The fifth question may be attempted from any section. Each question carries equal (8) marks

**Section A**

1. What do you understand by term Data? Explain its features. What are the basic requirements for data processing? 8
2. Explain the following: 8
  - a. Role of Data Processing
  - b. Data Processing Systems

**Section B**

3. Explain different methods of Data Processing in detail. 8
4. Write a note on: 8
  - a. Data Formats
  - b. Real Time Processing

**Section C**

5. Explain the term Data Visualization? What is the user psychology behind Data Visualization? What are the Goals of Data Visualization? 8
6. Explain DIKW hierarchy in detail. 8

**Section D**

7. Explain different Data Visualization Tools with example. 8
8. Write a note on: 8
  - a. Box Plots
  - b. Scatter Plots

Exam Code: 114003

Paper Code: 3318

**Programme - Bachelor of vocation (Artificial Intelligence and Data Science)**

**Semester – III**

**Course Title - Entrepreneurship Basics**

**Course Code – BVIL-3114**

**Time Allowed – 3 Hours**

**Maximum Marks – 40**

**Attempt five questions in all, selecting one from each section. The fifth question can be attempted from any section. Each question carries 8 marks.**

**Section-A**

1. Elaborate different classifications of entrepreneurship. Explain different types of entrepreneur.
2. What is the role of innovation in entrepreneurship? Briefly explain the techniques of generating new ideas.

**Section-B**

3. Write in detail about different forms of entrepreneurship.
4. Write notes on: a) Personality traits b) Behavioural traits

**Section-C**

5. What are entrepreneurial scripts? Write different points highlighting the importance of entrepreneurial scripts.
6. Justify the statement with a case study “Artificial Intelligence as an Entrepreneurship enabler”.

**Section-D**

7. Explain different business intelligence tools? What are different types of decisions where business intelligence can help?
8. How business intelligence helps in manufacturing operations? Explain with some case study.



Exam Code:114003

Paper Code:3319

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 in all, selecting one question from each section. The fifth question may be attempted from any section. All questions carry equal marks.

(Section A)

Q1) Discuss various validation techniques in detail.

(8)

Q2) Explain:-

- a) Hypothesis space
- b) Reinforcement learning

(2 X 4 = 8)

(Section B)

Q3) What do you mean by polynomial regression? Explain with an example. How it is different from linear and multiple regression?

(8)

Q4) a) Explain relationship between correlation and linear regression.

b) Which type of regression technique is most suitable in the case of one dependent and two independent variables? Justify.

(2 X 4 = 8)

(Section C)

Q5) What is clustering? Explain various clustering methods used in decision making.

(8)

Q6) Explain:-

- a) Naïve Bayes Classifier
- b) Model Assumption

(2 X 4 = 8)

(Section D)

Q7) What is SVM? How it is used for machine learning? Explain with an example.

(8)

Q8) Explain:-

- a) Gradient Descent
- b) Decision Tree

(2 X 4 = 8)

For Reappear Candidates (Old Syllabus (2022-23))

**Exam Code: 114003**

**Paper Code: 9306**

**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: Candidates are required to attempt five questions in all selecting at least one question from each section. The fifth question can be attempted from any section. Each question carries equal (8) marks.**

**Section-A**

1. Explain different types of validation techniques.
2. Explain Machine Learning techniques with examples.

**Section-B**

3. Explain Linear Regression in detail with examples.
4. Explain different Regularizations methods.

**Section-C**

5. Explain difference between classifications and clustering.
6. Explain Naïve Bayes classifier in detail.

**Section-D**

7. Explain Stochastic Gradient Descent.
8. Explain Support Vector Machine. Also explain its algorithm.