

# P P SAVANI UNIVERSITY

7<sup>th</sup> Semester of B. Tech. Examination

December 2021

SECE4513 Data Analytics

22.12.2021, Wednesday

Time: 9:00 a.m. To 11:30 a.m.

Maximum Marks: 60

## Instructions:

1. The question paper comprises of two sections.
2. Section I and II must be attempted in separate answer sheets.
3. Make suitable assumptions and draw neat figures wherever required.
4. Use of scientific calculator is allowed.

### SECTION - I

- Q - 1** Answer the Following: (MCQ/Short Question/Fill in the Blanks) [05]
- (i) Which levels of measurement are considered qualitative data?
  - (ii) Mention the names of two tests that can be used in case of a Small sample ( $n \leq 30$ ).
  - (iii) Which cannot be measured with "Categorical" data?  
Mean (b) Median (c) Mode (d) Variance
  - (iv) How much space is used by the index?
  - (v) The \_\_\_\_\_ of sampling distribution of a statistic is known as its standard error and is denoted by (S.E).
- Q - 2 (a)** Explain the Test of Significance. What are Null and Alternate hypothesis? What kind of errors can occur in sampling? [05]
- Q - 2 (b)** Explain the primarily used three methods of indexing. [05]
- OR
- Q - 2 (b)** What the formulae is for Type I student t test when SD is not given. [05]  
A random sample of 10 boys had the following IQ's 70,120,110,101,88,83,95,98,107,100. Do these data support the assumption of a population mean IQ of 100? Find the reasonable range in which most of the mean IQ values of samples of 10 boys lie?
- Q - 3 (a)** What are the 5 stages of analysis? Explain four types of analytics. [05]
- Q - 3 (b)** What are various levels of measurements? Explain them with examples and operations that can be performed on them. Which is the highest level of measurement amongst all? [05]

### OR

- Q - 3 (b)** A dice is thrown 264 times with the following results. Show that the dice is biased. [05]

No appeared on the dice	1	2	3	4	5	6
Frequency	40	32	28	58	54	60

- Q - 4** Attempt any one [05]
- (i) Explain the top 5 challenges of big data analytics and their remedies.
  - (ii) What is the purpose of indexing? What is the structure of an index in a database? What are the attributes of indexing?

### SECTION - II

- Q - 1** Answer the Following: (MCQ/Short Question/Fill in the Blanks) [05]
- (i) What is Regression?
  - (ii) Logistic Regression is used for classification purpose. (True/False)
  - (iii) Exploitation and exploration of knowledge is present in \_\_\_\_\_.

- (iv) Which is the most suitable plot to visualize outliers?
- (v) List one example of active learning technique.
- Q - 2 (a) What is Design of Experiment? Discuss about the need of design of experiment in data analytics. [05]
- Q - 2 (b) Differentiate between Supervised and Unsupervised Learning. [05]
- OR**
- Q - 2 (b) Discuss the importance of visualization techniques in data analytics. Explain different kinds of visualization techniques present in python. [05]
- Q - 3 (a) What is Active learning? Explain different types of active learning methods. [05]
- Q - 3 (b) Explain Apriori algorithm with suitable example [05]
- Q - 4 Attempt any one [05]
- (i) Write a note on Reinforcement Learning
- (ii) Differentiate between classification and regression.

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