

Code No:MB193K1 /19

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY GURAJADA VIZIANAGARAM

MBA III Semester Regular/Supplementary Examinations, November -2025

Essentials of Business Analytics (Business Analytics)

Time: 3 Hours

Max. Marks: 75

*Answer any FIVE Questions One Question from Each Unit*

*All Questions Carry Equal Marks*

**UNIT-I**

1. a How can business analytics be used to achieve a competitive advantage in today's dynamic market environments? 6M
- b Explain the importance of integrating analytics into business processes. 6M

**OR**

2. a Describe the various methods of data collection 6M
- b Examine the role of tabulation and classification in preparing data for statistical inference. 6M

**UNIT-II**

3. a Analyze the practical applications of skewness and kurtosis in business analytics 6M
- b What are the methods of calculating moments? Discuss 6M

**OR**

4. The frequency distribution is given below.

Class intervals	10-20	20-30	30-40	40-50	50-60	60-70	70-80
Marks	5	15	28	24	18	4	3

- a Calculate the median 6M
- b Calculate the standard deviation 6M

**UNIT-III**

5. a State and Prove Addition and Multiplication theorems in Probability 6M
- b State and Prove Bayes Theorem 6M

**OR**

6. a A Bag contains 8 Red balls and 6 Blue Balls two drawing of each two balls are made. Find the Probability that the first drawing gives 2 Red balls and second drawing gives 2 Blue balls. If the balls drawn first are replaced before the second draw. 6M
- b What are the applications of normal distribution? 6M

**UNIT-IV**

7. a State the relationship between sample size and standard error. 6M
- b What are the different methods of random sampling? Explain. 6M

**OR**

8. a What is bias in point estimation? Discuss the properties of a good point estimator. 6M
- b Explain the concepts of interval estimates and confidence intervals. 6M

**UNIT-V**

9. a Define Hypothesis? Explain the steps involved in the testing of hypothesis? 6M
- b Discuss the applications of t-test and F-test 6M

**OR**

10. a Distinguish between correlation and regression. 6M
- b Explain the role of times series in forecasting. 6M

## CASE STUDY

11

15M

A certain oil corporation conducts a seismic test on land to assess the possibility of extraction of oil from the land. From the past 200 records, the following test results and oil yields were obtained

Test results	Oil yield frequencies		
	High	Medium	Low
Good	40	20	15
Fair	18	22	25
Bad	8	10	45

Can you say that oil yields and test results are associated at 5% significance level?  
Apply  $\chi^2$  test