

Code No: 783AC

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

MBA III Semester Examinations, February - 2025

BUSINESS ANALYTICS

Time: 3 Hours

Max.Marks:60

Note: This question paper contains two parts A and B. i) **Part- A** for 10 marks, ii) **Part - B** for 50 marks.

- Part-A is a compulsory question which consists of ten sub-questions from all units carrying equal marks.
- Part-B consists of **ten questions** (numbered from 2 to 11) **carrying 10 marks each**. Each of these questions is from each unit and may contain sub-questions. For each question there will be an “either” “or” choice, which means that there will be two questions from each unit and the student should answer either of the two questions.

PART – A**(10 Marks)**

- 1.a) Define business analytics. [1]
- b) What is marketing analytics? [1]
- c) What are measures of dispersion? [1]
- d) Explain the advantages of descriptive analytics. [1]
- e) What is two way ANOVA? [1]
- f) Explain about multiple correlation. [1]
- g) What is Unsupervised Learning? [1]
- h) Write the benefits of data mining. [1]
- i) Write advantages of simulation. [1]
- j) Explain the concept of “what if analysis”. [1]

PART – B**(50 Marks)**

2. Discuss the benefits and barriers of Big Data Analytics and illustrate the business analytics in practice. [10]
- OR**
3. What are the uses of data visualization in data analytics? Explain the statistical methods for summarizing data. [10]
- 4.a) What is Binomial distribution and mention its formula?
 - b) The prices of tea company shares in Mumbai and Kolkata for last 10 months are recorded below. Determine in which market the share price show less variability. [4+6]

Month	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct
Mumbai	105	120	115	118	130	127	109	110	104	112
Kolkata	108	117	120	130	100	125	125	120	110	135

QA QA QA QA QA QA QA QA QA

QA 5. **OR**
Explain the significance of sampling in business research and elaborate on types of sampling techniques with suitable examples. [10]

- 6.a) Give the formula for Karl Pearson's correlation.
b) Consider the following data, obtain the two regression equations.

X	6	2	1	0	4	8
Y	9	1	1	5	8	7

Also, estimate Y when X is equal to 20. [5+5]

QA QA QA QA QA QA QA QA QA

- 7.a) Explain the various techniques of predictive analytics.
b) Describe the modes of building good regression models. [5+5]

8. What is data exploration? Explain its uses, advantages, disadvantages and types in detail? [10]

QA 9. **OR**
Explain the objectives, advantages, disadvantages and applications of cluster analysis? [10]

10. An automobile production line turns out about 100 cars per day, but deviations occur owing to many causes. The production is more accurately described by the probability distribution given below:

Production Per Day	95	96	97	98	99	100	101	102	103	104	105
Probability	0.03	0.05	0.07	0.10	0.15	0.20	0.15	0.10	0.07	0.05	0.03

Finished cars are transported across the bay, at the end of each day, by ferry. If the ferry has space only for 101 cars, what will be the average number of cars waiting to be shipped, and what will be the average number of empty spaces on the boat? Use Monte Carlo simulation and simulate for 20 days.

Random numbers are 07, 21, 12, 80, 08, 03, 32, 65, 43, 75, 23, 37, 16, 28, 30, 18, 25, 34, 19, 21. [10]

QA QA QA QA QA QA QA QA QA

- 11.a) What are the steps in decision tree analysis?
b) A company "X" has 2 options to sell its products. He can setup a showroom in the city or can sell from his factory outlet setting up a showroom will cost Rs 5,00,000 with a 60% probability of success. If the showroom succeeds, he can get a net profit of Rs 10,00,000 per year. If it fails, he can close the showroom or rent it out for an annual rent of Rs 2,40,000 . The probability of getting rent is 80%.

If it sells from the factory outlet, it has to incur Rs 50,000 as renovation charges. The successful chances of selling the product is 40% with a net profit of Rs 4,00,000 per year. Draw a decision tree and advice the company. [5+5]

QA QA QA QA QA QA QA QA QA