

Reg No.: \_\_\_\_\_

Name: \_\_\_\_\_

**APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY**

First Semester MBA Degree Regular and Supplementary Examination December 2023

**Course Code: 20MBA103****Course Name: QUANTITATIVE TECHNIQUES FOR MANAGERS**

Max. Marks: 60

Duration: 3 Hours

**Part A****Answer all questions. Each question carries 2 marks**

1. An Airline company recorded the following data regarding flight delays over a period of one week.

**Flight delays over a week**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
2	1	3	1	4	2	3

Find average number of delayed flights in a week. Compute the Standard Deviation.

2. Distinguish between Random Experiment and Sample Space with examples.
3. What is Hypothesis testing? What are the steps involved in Hypothesis testing.
4. State the significance and uses of Time Series Analysis in business.
5. What are the different types of correlation? Explain each with an example.

**Part B****Answer any 3 questions. Each question carries 10 marks**

6. The following table shows the data which relate to the profit of 100 companies. Compute the variance and Standard Deviation.

**Data relating to Profits of a company**

Profits (Rs. Lakhs)	Number of Companies
8-10	8
10-12	12
12-14	20
14-16	30
16-18	20
18-20	10

7. There is equal number of two types of dice in a bowl. On Type 1 die, the number 1 comes up 40% of the time. On Type II, the number 1 comes up 70% of the time. If a die is rolled once and the number '1' appears, what is the probability that it is a Type I die?

8. A firm produces light bulbs that are known to be normally distributed with a mean lifetime of 1200 hours and a standard deviation of 210 hours. What is the probability that a simple random sample of 100 bulbs will yield a mean that falls between 1140 and 1260 hours?
9. The given data shows the number of students placed with different companies from a college. The total batch strength stands at 350. Assuming that the relationship is parabolic curve, find the number of students placed in 2016.

<b>Year</b>	<b>Number of students placed</b>
2011	20
2012	40
2013	80
2014	140
2015	220

10. Assuming that a linear relationship exists between Trunk diameter and Tree height, calculate coefficient of correlation.

<b>Trunk Diameter</b>	<b>Tree Height</b>
8	35
9	49
7	27
6	33
13	60
7	21
11	45
12	51

(3x10 marks = 30 marks)

## Part C

## Compulsory Question 20 marks

11. a) Managers at a Department Store feel that its sales are dependent on the disposable income of people living in Cochin. The figures for the past 6 years are shown below. If disposable income rises to Rs.6000 next year, how much can the store anticipate in terms of sales?

(10 Marks)

Yearly Sales (In Rs. 100 crores)	Disposable Income of people in Cochin (In Rs 000s)
6	3
8	4
9	6
5	4
4.5	2
9.5	5

- b) Given below are the marks in English and Maths of a set of 10 students. Find out, if the students' performance in one subject is related to the performance in the other.

(10 Marks)

Marks in English	Marks in Maths
56	66
75	70
45	40
71	60
62	65
64	56
58	59
80	77
76	67
61	63

\*\*\*\*\*