

Roll.No.

20UAFAT1001

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(AUTONOMOUS)

(Affiliated to the University of Madras and Re-accredited with 'A+' Grade by NAAC)  
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B.Com. A&F - END SEMESTER EXAMINATIONS - NOVEMBER 2025  
SEMESTER - I

**20UAFAT1001 - Business Statistics**

Total Duration : 2 Hrs.30 Mins.

Total Marks : 60

### Section B

Answer any **SIX** questions ( $6 \times 5 = 30$  Marks)

1. Calculate the mode of the following distribution

<b>X</b>	5-10	10-15	15-20	20-25	25-30	30-35	35-40	40-45
<b>Y</b>	3	6	10	20	15	5	4	2

2. Explain the methods of measuring trend in a time series. Calculate a 3-year moving average for the following data:

<b>Year</b>	<b>Sales (in units)</b>
2019	200
2020	220
2021	210
2022	230
2023	240

3. A bag contains 5 red, 4 green, and 3 blue balls. One ball is drawn at random. Find:

- The probability of drawing a red ball.
- The probability of drawing a red or green ball.
- The probability that it is green, given it is not blue.

4. State the fundamental steps of hypothesis testing with a simple example.

5. From the following data find out rank correlation coefficient.

<b>Marks in tamil</b>	85	60	73	40	90
<b>Marks in English</b>	93	75	65	50	80

6. Define a time series. Explain the components of a time series with examples.
7. From a deck of 52 cards, one card is drawn. Find the probability that the card is an Ace, given that it is a Spade.

Contd...

8. A company wants to select a sample of employees from 3 departments:

- Dept A – 40 employees
- Dept B – 30 employees
- Dept C – 50 employees

Select a stratified sample of 12 employees. Find how many employees will be chosen from each department.

### Section C

Answer any **THREE** questions ( $3 \times 10 = 30$  Marks)

9. The following table shows the marks obtained by 50 students in an exam:

Marks	0-10	10-20	20-30	30-40	40-50
F	5	8	15	12	10

Calculate:

- a) Arithmetic Mean
- b) Median
- c) Mode

10. Compute the Karl Pearson's correlation coefficient for the following data:

X	1	2	3	4	5
Y	2	1	4	3	5

11. The quarterly sales (in units) of a company for 2 years are given below:

Year	Q1	Q2	Q3
2023	120	150	180
2024	130	160	190

Required:

- a) Calculate the annual total sales for each year.
- b) Compute the quarterly average.
- c) Find the seasonal index for each quarter using the simple average method.

12. Define probability. Explain the addition theorem and multiplication theorem of probability with examples.

13. The following table shows the sales (in units) of three salesmen over 4 months:

Month	Salesman A	Salesman B	Salesman C
Jan	15	18	20
Feb	20	22	18
Mar	18	20	22
Apr	25	24	26

Perform a one-way ANOVA to test whether the mean sales of the three salesmen are equal.

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