

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -2 EXAMINATION- 2025

BBA-III Semester

COURSE CODE (CREDITS): 23BB1HS311 (4)

MAX. MARKS: 25

COURSE NAME: STATISTICS FOR BUSINESS DECISIONS

COURSE INSTRUCTORS:ASA

MAX. TIME: 1 Hour 30 Min

Note: (a) All questions are compulsory.

(b) The candidate is allowed to make Suitable numeric assumptions wherever required for solving problems.

(c) Use of scientific calculator is allowed.

Q.No	Question	CO	Marks																		
Q1	A manufacturing firm producing automobile components wants to assess the daily productivity of its assembly line workers. The Production Head collected data for one month on how many units each worker produced per day. Since the workforce is large, the data were grouped into class intervals for analysis. Management aims to identify the average level of productivity to plan incentive schemes and training programs. The grouped data are given below. <table border="1"><tr><td>Output per day</td><td>30-40</td><td>40-50</td><td>50-60</td><td>60-70</td><td>70-80</td><td>80-90</td><td>90-100</td></tr><tr><td>No of Workers</td><td>5</td><td>9</td><td>15</td><td>22</td><td>18</td><td>7</td><td>4</td></tr></table> Calculate: - Calculate the mean, median, and mode of the number of units produced. - Interpret what these measures reveal about the overall productivity pattern of workers.	Output per day	30-40	40-50	50-60	60-70	70-80	80-90	90-100	No of Workers	5	9	15	22	18	7	4	3	4+2=6		
Output per day	30-40	40-50	50-60	60-70	70-80	80-90	90-100														
No of Workers	5	9	15	22	18	7	4														
Q2	A café owner wants to analyze the number of customers visiting the café each day over a month (30 days) to understand variability in daily traffic and plan staff shifts accordingly. The number of customers per day was recorded, and the following discrete frequency distribution was obtained: <table border="1"><tr><td>No of Customers (X)</td><td>20</td><td>25</td><td>30</td><td>35</td><td>40</td><td>45</td><td>50</td><td>55</td></tr><tr><td>No of Days (f)</td><td>2</td><td>3</td><td>5</td><td>6</td><td>7</td><td>3</td><td>2</td><td>2</td></tr></table> - Calculate Range, Quartile Deviation, Mean deviation about Mean and Mean Absolute Deviation. - Explain the significance of studying these measures for the café owner in terms of staff allocation, inventory planning, and peak-hour management.	No of Customers (X)	20	25	30	35	40	45	50	55	No of Days (f)	2	3	5	6	7	3	2	2	4	4+2=6
No of Customers (X)	20	25	30	35	40	45	50	55													
No of Days (f)	2	3	5	6	7	3	2	2													

Q3	A factory manager wants to analyze the daily production output (in units) of a critical assembly line over a period of 15 days. The purpose is to assess the consistency of production and identify days with unusually high or low output. This will help in planning workforce allocation, machine maintenance, and inventory management. The recorded daily output (in units) is: 120, 132, 128, 135, 140, 125, 130, 138, 127, 142, 136, 131, 129, 134, 137 a) Calculate the variance and standard deviation of the daily production. b) Interpret the results in terms of production consistency and planning.	4	2+2= 4
Q4	The salary data of 20 employees are as follows: 25, 28, 30, 32, 35, 35, 36, 37, 38, 40, 42, 45, 48, 50, 52, 55, 60, 65, 70, 80 Calculate Karl Pearson's and Bowley's coefficient of Skewness and compare the results from both the methods and interpret the nature of skewness.	3	4
Q5	a) Define the concept of moments in statistics. Derive the expressions for the first four central moments and explain their significance in describing a frequency distribution. b) Explain the concept of kurtosis in statistics. How does kurtosis help in understanding the peakedness or flatness of a distribution? Give examples of distributions with positive, negative, and zero kurtosis.	1	3+2= 5