Reg.No…….. Name……

BBA DEGREE END SEMESTER EXAMINATION – NOVEMBER 2025

UGP (HONS.) SEMESTER-1: CORE COURSE

COURSE: 24UBBACCR103: BUSINESS STATISTICS AND LOGIC

(For Regular 2025 & Improvement/Supplementary 2024 Admission)

Time: 2 Hours Max. Marks: 70

(Use of Scientific calculators and Statistical tables are permitted)
(Use of non-programmable scientific calculator is permitted)

Qn. No.	Question	CO No.	Level
	PART A ***(Maximum marks from this part is 10. Each question carries 2 marks)***		
1.	You are given two statements (S1 and S2) followed by two conclusions (C1 and C2). Assume the two statements to be true. S1: All roses are flowers S2: All flowers are plants C1: All roses are plants C2: Some plants are roses Which of the conclusions follow logically?	2	A
2.	If pen is called pencil, pencil is called eraser, eraser is called notebook, and notebook is called bag, then what do we write with?	2	A
3.	A man starts from his house and walks 100 meters north. He then turns right and walks 40 meters. After that, he turns right again and walks 100 meters. In which direction and at what distance is he from his starting point?	2	A
4.	A man said, “The woman in the photograph is the mother of the person who is the father of my grandson.” How is the woman in the photograph related to him?	2	A
5.	Define Mutually exclusive event with appropriate example.	4	U

<table>
<tr><td>6.</td><td>A die is rolled once. Find the probability of getting:
a) An even number
b) A number greater than 4</td><td>4</td><td>An</td></tr>
<tr><td>7.</td><td>A storekeeper knows that 60% of customers buy a product after a demo. If 5 customers are selected randomly, find the probability that exactly 3 customers buy the product.</td><td>4</td><td>An</td></tr>
<tr><td>8.</td><td>If the mean of the Poisson distribution 7 then comment on the variance.</td><td>4</td><td>A</td></tr>
<tr><td colspan="4">PART B
(Maximum marks from this part is 30. Each question carries 5 marks)</td></tr>
<tr><td>9.</td><td>Calculate Mean and Standard Deviation for the following data:
10, 26,15, 37, 32, 25, 32, 27</td><td>1</td><td>E</td></tr>
<tr><td>10.</td><td>Determine the Mean Deviation of the following observations from Mode.
<table><tr><td>x</td><td>30</td><td>35</td><td>39</td><td>47</td><td>50</td></tr><tr><td>f</td><td>4</td><td>7</td><td>8</td><td>2</td><td>3</td></tr></table></td><td>1</td><td>E</td></tr>
<tr><td>11.</td><td>The table below shows the hours of employee training per week and the number of errors made in production.
<table><tr><td>Training Hours</td><td>Number of Errors</td></tr><tr><td>1</td><td>18</td></tr><tr><td>2</td><td>15</td></tr><tr><td>3</td><td>12</td></tr><tr><td>4</td><td>8</td></tr><tr><td>5</td><td>9</td></tr></table>Draw a scatter diagram for the data. Identify the type of correlation between training hours and errors, and explain how the company can use this information to improve employee performance.</td><td>3</td><td>An</td></tr>
</table>

<table>
<tr><td>12.</td><td>Explain the concept of regression and its usage in business decision-making. Compare regression with correlation, highlighting at least two key differences.</td><td>5</td><td>U</td></tr>
<tr><td>13.</td><td>What do you understand about skewness and kurtosis? Discuss their significance in data analysis and how they help in understanding the distribution of data.</td><td>1</td><td>U</td></tr>
<tr><td>14.</td><td>A class has 20 students with an average score of 40. A new student joins, and the average becomes 41. What is the score of the new student?</td><td>4</td><td>E</td></tr>
<tr><td colspan="4">PART C
(Maximum marks from this part is 30. Each question carries 15 marks)</td></tr>
<tr><td>17.</td><td>Compare the consistency of the sales performance of two salespersons, A and B, over 6 months and state who is more consistent.
<table><tr><td>A</td><td>15</td><td>20</td><td>12</td><td>14</td><td>15</td><td>18</td></tr><tr><td>B</td><td>13</td><td>16</td><td>15</td><td>20</td><td>22</td><td>29</td></tr></table></td><td>3</td><td>E</td></tr>
<tr><td>18.</td><td>A retail company collected data on monthly advertising expenditure (in ₹1000) and monthly sales revenue (in ₹10,000) over 8 months:
<table><tr><td>Advertising</td><td>Sales</td></tr><tr><td>20</td><td>45</td></tr><tr><td>25</td><td>50</td></tr><tr><td>30</td><td>55</td></tr><tr><td>35</td><td>60</td></tr><tr><td>40</td><td>65</td></tr><tr><td>30</td><td>52</td></tr><tr><td>25</td><td>48</td></tr><tr><td>20</td><td>46</td></tr></table>Use the regression analysis to predict the sales if the company spends ₹50,000 on advertising next month.</td><td>5</td><td>An</td></tr>
</table>

19.	Two departments of a company reported their average monthly expenses. Department X has 25 employees, with an average monthly expense of ₹12,000. Department Y has 35 employees, with an average monthly expense of ₹15,000. Calculate the combined average monthly expense per employee across both departments.	4	E
20.	(a) Write down the Pdf of Normal distribution. The monthly sales (in ₹1000) of a company follow a normal distribution with a mean of 50 and a standard deviation of 8. (b) Find the probability that sales in a month will be more than ₹65,000. (c) Find the probability that sales in a month will be less than ₹55,000.	3	An

****