



PRESIDENCY UNIVERSITY

BENGALURU

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Mid - Term Examinations – December 2025

Date: 08-12-2025

Time: 10:00am – 11:30am

School: SOM-PG	Program: MBA	
Course Code: QNT4111	Course Name: Applied Business Statistics	
Semester: I	Max Marks:50	Weightage:25%

CO - Levels	C01	C02	C03	C04	C05
Marks	34	16			

Instructions:

- (i) Read all questions carefully and answer accordingly.
- (ii) Do not write anything on the question paper other than roll number.

Part- A

Answer ALL the Questions. Each question carries 3marks.

5Q x 3M=15 Marks

1	An analyst is summarizing the sales data of a company using the average value. What measure of central tendency is suitable for the study and why?	3 Marks	L1	C01
2	A teacher is summarizing student marks. She notices that the median does not reflect the exact values of all students' marks, but the mean takes all marks into account. What are the demerits of using median, in this case?	3 Marks	L1	C01
3	A quality inspector checks 10 items from a production line and records whether each item is defective or not. The number of defective items follows a specific probability distribution. Identify and define the probability distribution in this context.	3 Marks	L1	C02
4	Find the range for the following data: 10 28 16 34 9 20	3 Marks	L1	C01
5	An e-commerce business records the number of orders received per hour. The number of orders can only take specific whole values. Identify and define this random variable in this situation.	3 Marks	L1	C02

Part- B

Answer the Questions

2Qx10M = 20 Marks

6.	<p>The radio music listener market is diverse. Listener formats might include adult contemporary, album rock, top 40, oldies, rap, country and western, classical, and jazz. In targeting audiences, market researchers need to be concerned about the ages of the listeners attracted to particular formats. Suppose a market researcher surveyed a sample of 170 listeners of country music radio stations and obtained the following age distribution.</p> <table><thead><tr><th>Age</th><th>Frequency</th></tr></thead><tbody><tr><td>15–under 20</td><td>9</td></tr><tr><td>20–under 25</td><td>16</td></tr><tr><td>25–under 30</td><td>27</td></tr><tr><td>30–under 35</td><td>44</td></tr><tr><td>35–under 40</td><td>42</td></tr><tr><td>40–under 45</td><td>23</td></tr><tr><td>45–under 50</td><td>7</td></tr><tr><td>50–under 55</td><td>2</td></tr></tbody></table> <p>Explain the mean, median and modal ages of country music listeners?</p>	Age	Frequency	15–under 20	9	20–under 25	16	25–under 30	27	30–under 35	44	35–under 40	42	40–under 45	23	45–under 50	7	50–under 55	2	10 Marks	L2	CO1		
Age	Frequency																							
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50–under 55	2																							
Or																								
7.	<p>The 2024 New Zealand census asked for each person’s age. Suppose that a sample of 15 households taken from the census data showed the age of the first person recorded on the census form to be as follows. Compute (i) the positional value such that 25% of observations are below that value (ii) the positional value such that 25% of observations are above that value</p> <table><tbody><tr><td>42</td><td>29</td><td>31</td><td>38</td><td>55</td><td>27</td><td>28</td><td>33</td><td>49</td><td>70</td></tr><tr><td>25</td><td>21</td><td>38</td><td>47</td><td>63</td><td></td><td></td><td></td><td></td><td></td></tr></tbody></table>	42	29	31	38	55	27	28	33	49	70	25	21	38	47	63						10 Marks	L2	CO1
42	29	31	38	55	27	28	33	49	70															
25	21	38	47	63																				
8.	<p>The following data are the result of a historical study of the number of flaws found in a porcelain cup produced by a manufacturing firm. Use these data and the associated probabilities to compute the expected number of flaws and the variance of flaws.</p> <table><thead><tr><th>Flaws</th><th>Probability</th></tr></thead><tbody><tr><td>0</td><td>.5</td></tr><tr><td>1</td><td>.3</td></tr><tr><td>2</td><td>.1</td></tr><tr><td>3</td><td>.05</td></tr><tr><td>4</td><td>.05</td></tr></tbody></table>	Flaws	Probability	0	.5	1	.3	2	.1	3	.05	4	.05	10 Marks	L3	CO2								
Flaws	Probability																							
0	.5																							
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9.	<p>In the past few years, outsourcing overseas has become more frequently used than ever before by U.S. companies. However, outsourcing is not without problems. A recent survey by Purchasing indicates that 15% of the companies that outsource overseas use a consultant. Suppose 8 companies that outsource overseas are randomly selected and number of companies that outsource overseas use a consultant has a binomial distribution.</p> <p>a. What is the probability that exactly four companies that outsource overseas use a consultant?</p> <p>b. What is the probability that less than two companies that outsource overseas use a consultant?</p>	10 Marks	L3	C02
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Part- C

Answer the following questions

1Qx15M=15Marks

10.	From the prices X and Y of shares A and B respectively given below state which share is more stable in value on the basis of coefficient of variation						15 Marks	L3	C01	
	Price of share A (X)	55	54	52	53	56				58
	Price of share B (Y):	108	107	105	105	106				107

******* BEST WISHES *******