JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -3 EXAMINATION- 2025

BBA-III Semester

COURSE CODE (CREDITS): 23BB1HS311 (4) MAX. MARKS: 35

COURSE NAME: STATISTICS FOR BUSINESS DECISIONS

COURSE INSTRUCTORS: ASA MAX. TIME: 2 Hours

Note: *(a) All questions are compulsory.*
(b) The candidate is allowed to make Suitable numeric assumptions wherever required for solving problems
(c) Use of Calculator is allowed.

Internal Test-3-2025

Q.No	Question	CO	Marks
Q1	Priyanshu Retail Store tracks prices of key household products every year to understand inflation trends and make better purchasing decisions. The management wants to compare how prices have changed from the base year (Year 0) to the current year (Year 1). The store selected three commonly purchased products: Product A, Product B, and Product C. The price and quantity details are as follows: **Product / Base Year Price / Base Year Quantity / Current Year Price / Current Year Quantity** A: 20 / 10 / 25 / 12 B: 15 / 20 / 18 / 22 C: 10 / 30 / 12 / 28 Calculate: Laspeyres' Price Index; Paasche's Price Index and Fisher's Ideal Price Index	4	5
Q2	The National Retail Price Monitoring Agency (NRPMA) has two index series: Series A (Old Method): Base Year = 2010; Series B (New Method): Base Year = 2015. The agency wants to create a single continuous and comparable index series from 2010 to 2020. **Series A (Base Year 2010)** Year / Index 2010 / 100 2011 / 106 2012 / 112 2013 / 118 2014 / 123 2015 / 132 **Series B (Base Year 2015)** Year / Index 2015 / 100 2016 / 107 2017 / 114 2018 / 121 2019 / 128 2020 / 136 **a)** Shift the base of Series A from 2010 to 2015. **b)** Splice the two series to create a continuous index from 2010 to 2020 with Base 2010 = 100.	4	5

<table>
<tr><td>Q3</td><td>A retail chain wants to understand whether there is a relationship between advertising expenditure and sales revenue across its outlets. The marketing manager randomly selects 8 stores and records the following data:

<table><tr><td>Store</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td></tr><tr><td>Advt Expenditure (Rs '000)</td><td>20</td><td>25</td><td>28</td><td>22</td><td>30</td><td>27</td><td>35</td><td>24</td></tr><tr><td>Sales Revenue (Rs '000)</td><td>75</td><td>78</td><td>85</td><td>72</td><td>90</td><td>82</td><td>95</td><td>76</td></tr></table>a) Calculate Karl Pearson's Coefficient of Correlation between the two.
b) Obtain a regression equation also keeping sales revenue as dependent variable.</td><td>3</td><td>3+3 = 6</td></tr>
<tr><td>Q4</td><td>A bag contains 6 red balls, 4 blue balls, and 5 green balls. Two balls are drawn one after the other without replacement.
a) What is the probability that both balls drawn are blue?
b) What is the probability that the first ball is red and the second ball is green?
c) What is the probability that both balls drawn are of the same color?</td><td>2</td><td>1+2+2 = 5</td></tr>
<tr><td>Q5</td><td>The Training & Development Manager at BrightSkills Academy wants to evaluate the performance of students who attended a Business Communication Workshop. Each student took a test of 50 marks. The scores of 10 randomly selected students are as follows: 22, 27, 31, 34, 36, 38, 41, 43, 45, 48. The manager wants you to calculate mean using grouped frequency distribution with class interval of 10 marks.</td><td>3</td><td>5</td></tr>
<tr><td>Q6</td><td>What is Spearman's Rank Correlation? How it is different than Karl Pearson's Correlation Coefficient?</td><td>1</td><td>3</td></tr>
<tr><td>Q7</td><td>Write short notes on (max 50 words)
a) Limitations of the coefficient of correlation
b) Value Index
c) Kurtosis
d) Conditional Probability</td><td>1</td><td>1.5x4 = 6</td></tr>
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JUIT TEE-3 EXAMINATION - Dec - 2025