

Name of Scholar (in CAPITAL):		Printed																
Admission No.:		Pages:01																
Core Coursework End Term Examination (Regular Back), May-June 2024 (For Fall 2023-2024) [Programme: PhD]																		
Course Title: Statistics and Computer Applications		Max Marks: 100																
Course Code: C1RC101T		Time: 3 hrs																
Instructions:	1. Answer as per the instructions in each section. 2. Assume missing data suitably (if any).																	
Section A: All questions are compulsory. (5 x 5 = 25 Marks)																		
		Marks																
1	Illustrate with suitable examples the use of statistical methods in research and business and industry.	5																
2	How would you describe a 'p-value'? What is its significance in research?	5																
3	What are the possible difficulties a researcher might face in formulation of a good hypothesis. Also discuss the limitations of Null Hypothesis.	5																
4	What is meant by Correlation? Does it always signify cause and effect relationship between two variables? Comment on Correlation vs. Causation.	5																
5	What are degrees of freedom? What role do degrees of freedom play in hypothesis testing. How to calculate degrees of freedom.	5																
Section B: Answer any five questions. (15 x 5 = 75 Marks)																		
6	Calculate mean of the Following frequency distribution of marks by (i) Direct Method, (ii) Short-cut Method (iii) Step Deviation Method. <table border="1" style="margin: 5px auto; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Marks:</td> <td style="padding: 2px;">0-10</td> <td style="padding: 2px;">10-20</td> <td style="padding: 2px;">20-30</td> <td style="padding: 2px;">30-40</td> <td style="padding: 2px;">40-50</td> <td style="padding: 2px;">50-60</td> <td style="padding: 2px;">60-70</td> </tr> <tr> <td style="padding: 2px;">No. of students:</td> <td style="padding: 2px;">5</td> <td style="padding: 2px;">12</td> <td style="padding: 2px;">30</td> <td style="padding: 2px;">45</td> <td style="padding: 2px;">50</td> <td style="padding: 2px;">37</td> <td style="padding: 2px;">21</td> </tr> </table>	Marks:	0-10	10-20	20-30	30-40	40-50	50-60	60-70	No. of students:	5	12	30	45	50	37	21	15
Marks:	0-10	10-20	20-30	30-40	40-50	50-60	60-70											
No. of students:	5	12	30	45	50	37	21											
7	Discuss when can a researcher use two-way ANOVA? How does the ANOVA test work and what are the assumptions of the two-way ANOVA?	15																
8	What is a <i>t-Test</i> ? Discuss <i>t-Test</i> assumptions and types of <i>t</i> -tests. How are <i>t</i> -tests used? Discuss the steps to perform a <i>t</i> -test (do write formula).	15																
9	What do you understand by Chi-Square Test. Differentiate between Chi-Square Test of Independence and Chi-Square Goodness of Fit Test on the basis of variables, purpose, example and degree of freedom.	15																
10	How Do You Interpret P-Values, Degrees of Freedom, and Confidence Interval? Are they related to each other; do they impact each other, how?	15																
11	How is spreadsheet application useful to researchers in modern scenario? Discuss its functions and features for statistical data analysis.	15																