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22RMI16

First Semester M.Tech. Degree Examination, Jan./Feb. 2023 Research Methodology and IPR

Time: 3 hrs.

Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.

2. M : Marks , L: Bloom's level , C: Course outcomes.

Module – 1				M	L	C																		
Q.1	a.	What do you mean by research? Explain its significance in modern times and also list the objectives of research.	10	L2	CO1																			
	b.	Briefly describe the different steps involved in a research process.	10	L2	CO1																			
OR																								
Q.2	a.	List and explain the Qualities of a good research.	10	L2	CO1																			
	b.	List all the criterias satisfied by the scientific research.	10	L2	CO1																			
Module – 2																								
Q.3	a.	What is the importance of literature review in research.	10	L2	CO2																			
	b.	Explain how to review the literature (steps) and searching for the existing literature.	10	L2	CO2																			
OR																								
Q.4	a.	Explain meaning of Research Design and Features of a good design.	10	L2	CO2																			
	b.	Describe important concepts relating to a Research design.	10	L2	CO2																			
Module – 3																								
Q.5	a.	Explain the main steps in sampling design.	10	L2	CO2																			
	b.	List and explain types of sampling design.	10	L2	CO2																			
OR																								
Q.6	a.	Explain the classification of measurement scales.	10	L2	CO2																			
	b.	What is the Goodness of measurement scales? Explain.	10	L2	CO2																			
Module – 4																								
Q.7	a.	What is a hypothesis? List the characteristics of hypothesis.	10	L2	CO2																			
	b.	The procedure of testing hypothesis requires a researcher to adopt several steps. Describe in brief all such steps.	10	L3	CO3																			
OR																								
Q.8	a.	Find the value of χ^2 for the following information: <table border="1" style="width: 100%; margin: 5px 0;"> <tr> <td style="text-align: center;">Class</td> <td style="text-align: center;">A</td> <td style="text-align: center;">B</td> <td style="text-align: center;">C</td> <td style="text-align: center;">D</td> <td style="text-align: center;">E</td> </tr> <tr> <td style="text-align: center;">Observed frequency</td> <td style="text-align: center;">8</td> <td style="text-align: center;">29</td> <td style="text-align: center;">44</td> <td style="text-align: center;">15</td> <td style="text-align: center;">4</td> </tr> <tr> <td style="text-align: center;">Theoretical frequency</td> <td style="text-align: center;">7</td> <td style="text-align: center;">24</td> <td style="text-align: center;">38</td> <td style="text-align: center;">24</td> <td style="text-align: center;">7</td> </tr> </table>	Class	A	B	C	D	E	Observed frequency	8	29	44	15	4	Theoretical frequency	7	24	38	24	7	10	L3	CO3	
	Class	A	B	C	D	E																		
Observed frequency	8	29	44	15	4																			
Theoretical frequency	7	24	38	24	7																			
b.	A die is turn on 132 times with following results: <table border="1" style="width: 100%; margin: 5px 0;"> <tr> <td style="text-align: center;">Number turned up</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> <td style="text-align: center;">3</td> <td style="text-align: center;">4</td> <td style="text-align: center;">5</td> <td style="text-align: center;">6</td> </tr> <tr> <td style="text-align: center;">Frequency</td> <td style="text-align: center;">16</td> <td style="text-align: center;">20</td> <td style="text-align: center;">25</td> <td style="text-align: center;">14</td> <td style="text-align: center;">29</td> <td style="text-align: center;">28</td> </tr> </table> Is the die unbiased?	Number turned up	1	2	3	4	5	6	Frequency	16	20	25	14	29	28	10	L3	CO3						
Number turned up	1	2	3	4	5	6																		
Frequency	16	20	25	14	29	28																		
Module – 5																								
Q.9	a.	Explain the significance of a research report and narrate the various steps involved in writing such a report.	10	L3	CO3																			
	b.	Mention the different types of report, particularly pointing out the difference between a technical report and a popular report.	10	L3	CO3																			
OR																								
Q.10	a.	What is TRIPS? Explain in brief?	10	L2	CO2																			
	b.	What is Patent Cooperation Treaty (PCT)? Write its advantages and basic principles.	10	L2	CO2																			
