

|  |  |   |                 |       |       |       |       |       |       |                    |            |    |    |    |    |    |    |   |    |
|--|--|---|-----------------|-------|-------|-------|-------|-------|-------|--------------------|------------|----|----|----|----|----|----|---|----|
| Name. ....                                   |  | Printed                                 |                 |       |       |       |       |       |       |                    |            |    |    |    |    |    |    |   |    |
| Student Admn. No.: .....                     |  | Pages:01                                |                 |       |       |       |       |       |       |                    |            |    |    |    |    |    |    |   |    |
| <b>End Term Examination (ETE), June 2023</b> |  |   |                 |       |       |       |       |       |       |                    |            |    |    |    |    |    |    |   |    |
| [Programme: Ph.D] [Semester: I]              |  |   |                 |       |       |       |       |       |       |                    |            |    |    |    |    |    |    |   |    |
| Course Title : Statistical Methods           |  |   | Max Marks: 50   |       |       |       |       |       |       |                    |            |    |    |    |    |    |    |   |    |
| Course Code: RME703                          |  |   | Time: 3 hrs.    |       |       |       |       |       |       |                    |            |    |    |    |    |    |    |   |    |
| <b>Instructions:</b>                         |  | 1. Answer All the questions             |                 |       |       |       |       |       |       |                    |            |    |    |    |    |    |    |   |    |
|  |  | 2. Assume missing data suitably, if any |                 |       |       |       |       |       |       |                    |            |    |    |    |    |    |    |   |    |
| <b>Group A (5X2=10 Marks)</b>                |  |   |                 |       |       |       |       |       |       |                    |            |    |    |    |    |    |    |   |    |
| 1.   | Define sample space in a random experiment with a suitable example.  |   | 2               |       |       |       |       |       |       |                    |            |    |    |    |    |    |    |   |    |
| 2.   | Write the axiomatic definition of probability.   |   | 2               |       |       |       |       |       |       |                    |            |    |    |    |    |    |    |   |    |
| 3  | Write the full form of “SPSS” and “MATLAB”.  |   | 2               |       |       |       |       |       |       |                    |            |    |    |    |    |    |    |   |    |
| 4  | Define any two measures of dispersion.   |   | 2               |       |       |       |       |       |       |                    |            |    |    |    |    |    |    |   |    |
| 5  | Find the mode for the following frequency distribution:<br>X:    1     2     3     4     5     6     7     8<br>f:    4     9     16    25    22    15    7     3  |   | 2               |       |       |       |       |       |       |                    |            |    |    |    |    |    |    |   |    |
| <b>GROUP B (4X5=20 Marks)</b>                |  |   |                 |       |       |       |       |       |       |                    |            |    |    |    |    |    |    |   |    |
| 6  | Write the sample space for rolling two dice. If X denote the sum of numbers on the upper face of two dice, then what will be the probability distribution of X.  |   | 5               |       |       |       |       |       |       |                    |            |    |    |    |    |    |    |   |    |
| 7  | Fit a straight line by using least square method for the following data:<br><table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">Age (X):</td> <td style="width: 10%;">15</td> <td style="width: 10%;">20</td> <td style="width: 10%;">25</td> <td style="width: 10%;">30</td> <td style="width: 10%;">35</td> <td style="width: 10%;">40</td> </tr> <tr> <td>Glucose level (Y):</td> <td>75</td> <td>65</td> <td>79</td> <td>75</td> <td>83</td> <td>81</td> </tr> </table>  |   | Age (X):        | 15    | 20    | 25    | 30    | 35    | 40    | Glucose level (Y): | 75         | 65 | 79 | 75 | 83 | 81 | 5  |   |    |
| Age (X):                                     | 15   | 20                                      | 25              | 30    | 35    | 40    |       |       |       |                    |            |    |    |    |    |    |    |   |    |
| Glucose level (Y):                           | 75   | 65                                      | 79              | 75    | 83    | 81    |       |       |       |                    |            |    |    |    |    |    |    |   |    |
| 8  | Explain the application of “SPSS” in statistical data analysis.  |   | 5               |       |       |       |       |       |       |                    |            |    |    |    |    |    |    |   |    |
| 9  | Write a short note on “MATLAB”.  |   | 5               |       |       |       |       |       |       |                    |            |    |    |    |    |    |    |   |    |
| <b>GROUP C (2X10=20 Marks)</b>               |  |   |                 |       |       |       |       |       |       |                    |            |    |    |    |    |    |    |   |    |
| 10   | Calculate the arithmetic mean for the following frequency distribution:<br><table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">Class interval:</td> <td style="width: 10%;">0-10</td> <td style="width: 10%;">10-20</td> <td style="width: 10%;">20-30</td> <td style="width: 10%;">30-40</td> <td style="width: 10%;">40-50</td> <td style="width: 10%;">50-60</td> <td style="width: 10%;">60-70</td> </tr> <tr> <td>Frequency:</td> <td>5</td> <td>9</td> <td>18</td> <td>32</td> <td>20</td> <td>12</td> <td>4</td> </tr> </table> |   | Class interval: | 0-10  | 10-20 | 20-30 | 30-40 | 40-50 | 50-60 | 60-70              | Frequency: | 5  | 9  | 18 | 32 | 20 | 12 | 4 | 10 |
| Class interval:                              | 0-10   | 10-20                                   | 20-30           | 30-40 | 40-50 | 50-60 | 60-70 |       |       |                    |            |    |    |    |    |    |    |   |    |
| Frequency:                                   | 5  | 9                                       | 18              | 32    | 20    | 12    | 4     |       |       |                    |            |    |    |    |    |    |    |   |    |
| 11   | Define correlation. Explain the various types of correlation. Also discuss the application of correlation in the real life.  |   | 10              |       |       |       |       |       |       |                    |            |    |    |    |    |    |    |   |    |