R20 Regulation *Subject code: 3B3GB*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

(Autonomous, Accredited by NAAC with 'A+' Grade)

B.Tech III Semester Supplementary Examinations, December 2025

STATISTICAL METHODS

(Common to CSE (AI&ML) & CSE (DS))

Maximum Marks: 70 Date: 30.12.2025 Duration: 3 hours

Note: **1.This question paper contains two parts A and B.**
2. Part A is compulsory which carries 20 marks. Answer all questions in Part A.
3. Part B consists of 5 Units. Answer any one full question from each unit.
4. Each question carries 10 marks and may have a, b, c, d as sub questions.

Statistical tables are allowed

Part-A

All the following questions carry equal marks (10X2M=20 Marks)		Marks	CO	BTL
1	Define Histogram.	2M	1	L1
2	Calculate median of 34,45,7,9,10,22,13.	2M	1	L1
3	Find D_1 and D_9 for 45,8,90,34,9,5,4,3,2,67.	2M	2	L1
4	Calculate Mean deviation from median to the data 23,45,6,78,9,1,10,45,5,2.	2M	2	L1
5	Define Estimator and estimate.	2M	3	L1
6	How many different samples of size n= 2 can be chosen from a finite population of size N = 25.	2M	3	L1
7	Write the test statistic for difference of two proportions in large samples.	2M	4	L1
8	Define Left tailed test.	2M	4	L1
9	Write any two properties of Regression co-efficient.	2M	5	L1
10	Write about one way classification.	2M	5	L1

Part-B

Answer All the following questions. (5X10M=50Marks)		Marks	CO	BTL
11	Explain Measures of central tendency.	10M	1	L2
	OR			
12	Find Median to the Following data.	10M	1	L2
13	Calculate Mean Deviation from mean it's co-efficient to the following data.	10M	2	L2
	OR			

Marks	0-100	100-200	200-300	300-400	400-500	500-600	600-700	700-800
No.of students	34	56	8	90	122	123	34	9

Classes	0-5	5-10	10-15	15-20	20-25	25-30	30-35
frequency	2	13	35	13	15	12	11

<table>
<tr><td>14</td><td>Calculate Standard Deviation its co-efficient to the following data.
<table>
<tr><td>Classes</td><td>0-50</td><td>50-100</td><td>100-150</td><td>150-200</td><td>200-250</td><td>250-300</td><td>300-350</td></tr>
<tr><td>frequency</td><td>20</td><td>16</td><td>35</td><td>3</td><td>10</td><td>5</td><td>11</td></tr>
</table></td><td>10M</td><td>2</td><td>L2</td></tr>
<tr><td>15</td><td>a) A sample of size 300 was taken whose variance is 225 and mean 54. Construct 95% confidence interval for the mean. And also find maximum error of mean at 95% confidence?
b) A sample of size 16 was taken whose standard deviation 100 and mean 53. Construct 99% confidence interval for the mean. And also find maximum error of mean at 99% confidence?</td><td>5M

5M</td><td>3</td><td>L2</td></tr>
<tr><td></td><td>OR</td><td></td><td></td><td></td></tr>
<tr><td>16</td><td>A population consists of five numbers ,3,6,9,15and 27.Consider all possible samples of size three Which can be drawn without replacement from this population. Find
i) The population mean.
ii) The standard deviation of the population.
iii) The mean of the sampling distribution of means.
iv) Standard deviation of the sampling distribution of means.</td><td>10M</td><td>3</td><td>L2</td></tr>
<tr><td>17</td><td>A die was thrown 9000 times and of these 3220 yielded a 3 &4, Is this consistent with the hypothesis that the die was unbiased?</td><td>10M</td><td>4</td><td>L2</td></tr>
<tr><td></td><td>OR</td><td></td><td></td><td></td></tr>
<tr><td>18</td><td>A simple sample of the heights of 6400 English men has a mean of 67.585 inches and a S.D of 2.56 inches while a simple sample of height of 1600 Australians has mean of 68.55 and a S.D of 2.52. Do the data indicate the Australians are on the average taller than Englishmen use 1% l.o.s.</td><td>10M</td><td>4</td><td>L2</td></tr>
<tr><td>19</td><td>From the following data calculate the correlation coefficient.
<table>
<tr><td>X</td><td>23</td><td>33</td><td>45</td><td>78</td><td>16</td><td>16</td><td>65</td><td>24</td><td>16</td></tr>
<tr><td>y</td><td>11</td><td>13</td><td>24</td><td>43</td><td>15</td><td>64</td><td>20</td><td>45</td><td>56</td></tr>
</table></td><td>10M</td><td>5</td><td>L2</td></tr>
<tr><td></td><td>OR</td><td></td><td></td><td></td></tr>
<tr><td>20</td><td>Solve using two –way ANOVA.
<table>
<tr><td></td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td></tr>
<tr><td>1</td><td>13</td><td>15</td><td>14</td><td>14</td><td>15</td><td>16</td><td>27</td></tr>
<tr><td>2</td><td>10</td><td>12</td><td>11</td><td>15</td><td>10</td><td>11</td><td>12</td></tr>
<tr><td>3</td><td>11</td><td>14</td><td>17</td><td>13</td><td>12</td><td>12</td><td>10</td></tr>
</table></td><td>10M</td><td>5</td><td>L2</td></tr>
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