



B.Tech III Semester Supplementary Examinations, December 2024

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

Maximum Marks: 70

Date:04.12.2024

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 which carries 10M.
 4. Each question carries 10 marks and may have a, b, c, d as sub questions.

Part-A

All the following questions carry equal marks (10X2M=20) Marks)		CO	Bloom Tx
1	Define the Statistics.	1	L1
2	Calculate Geometric mean of 2,24,5,67,89,122.	1	L1
3	Write the formula for Quartile deviation and its co-efficient?	2	L1
4	Find Q_1 and Q_3 to the data 21,34,6,7,90,23,45,1,5.	2	L1
5	Define parameter and Statistic.	3	L1
6	A random sample of size 100 has a standard deviation of 5. What can say about the maximum error with 95% confidence?	3	L1
7	Define type II error.	4	L1
8	Write the test statistic of single proportion in large samples.	4	L1
9	Write any two properties of Regression co-efficient.	5	L1
10	Write about one way classification.	5	L1

Part-B

Answer All the following questions. (5X10M=50Marks)		CO	Bloom Tx																
11	Explain Functions of Statistics. [10M]	1	L2																
OR																			
12	Find mean to the following data. [10M]	1	L2																
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13	Calculate Mean Deviation from mean it's co-efficient to the following data. [10M]	2	L2																
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14	Calculate Standard Deviation its co-efficient to the following data. [10M]	2	L2																
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15	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? [5M] 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? [5M]	3	L2																																								
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16	A population consists of six numbers 4,8,12,16,20 and 24. Consider all possible samples of size two Which can be drawn without replacement from this population. [10M] 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.	3	L2																																								
17	Random samples of 400 men and 600 women were asked whether they would like to have a flyover near their residence, 200 men and 325 women were in favour of the proposal. Test the hypothesis that proportions of men and women in favor of the proposal are same, at 5% level. [10M]	4	L2																																								
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18	In a city A 20% of a random sample of 900 school boys has certain slight physical defect. In another city B 18.5% of a random sample of 1600 schoolboys has the same defect. Is the difference between the proportion significance at 5% l.o.s. [10M]	4	L2																																								
19	From the following data calculate the correlation coefficient. [10M] <table border="1" style="width: 100%; border-collapse: collapse;"> <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></td> <td>57</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></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> <tr> <td></td> <td>64</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>	X	23	33	45	78	16	16	65	24	16		57									y	11	13	24	43	15	64	20	45	56		64									5	L2
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20	Solve using two –way classification of ANOVA. [10M] <table border="1" style="width: 100%; border-collapse: collapse;"> <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>		1	2	3	4	5	6	7	1	13	15	14	14	15	16	27	2	10	12	11	15	10	11	12	3	11	14	17	13	12	12	10	5	L2								
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