REVA UNIVERSITY
Bengaluru, India

SCHOOL OF COMPUTER SCIENCE AND APPLICATIONS
Odd Semester 2024-2025
Assignment IV

Programme: PG – MCA
Semester: I
Section: A
Date of Announcement: 21-03-25
Date of Submission: 31-03-25

Course Code: M23DE0101
Course Title: Mathematics for Computer Applications
Name of the Faculty: Dr. M Vinayaka Murthy

<table>
<tr><th>Sl. No</th><th>Assignment Question</th><th>CO</th><th>PO</th><th>PSO</th></tr>
<tr><td>1.</td><td>A machine is designed so as to fill bottles with 200 ml of a medicine. A sample of 100 bottles when measured had a mean content of 201.5 ml. If the standard deviation of the filling is known as to be 5 ml, test whether the machine is functioning properly. Use 1% level of significance.</td><td>4</td><td>1,2</td><td>1,3</td></tr>
<tr><td>2</td><td>From the following data, test whether the difference between the proportions in the two samples are significant.
<table>
<tr><td></td><td>Size</td><td>Proportion</td></tr>
<tr><td>Sample I</td><td>1000</td><td>0.02</td></tr>
<tr><td>Sample II</td><td>1200</td><td>0.01</td></tr>
</table></td><td>4</td><td>1,3</td><td>1,2</td></tr>
<tr><td>3.</td><td>Intelligence test on two groups of Males and Females gave the following results.
<table>
<tr><td>Marks</td><td>Mean</td><td>S D</td><td>sample size</td></tr>
<tr><td>Females</td><td>75</td><td>15</td><td>150</td></tr>
<tr><td>Males</td><td>70</td><td>20</td><td>250</td></tr>
</table>
is there significant difference in the mean marks obtained by the males and females? Test at 1% level of significance.</td><td>4</td><td>1,2</td><td>1,3</td></tr>
<tr><td>4</td><td>500 articles from a factory are examined and found to be 2% defective. 800 similar articles from a second factory are found to have only 1.5% defectives. Can it be reasonable concluded that the products of the first factory are inferior to those of the second Use 5% level of significance</td><td>4</td><td>1,2</td><td>1,3</td></tr>
<tr><td>5</td><td>It is required test the hypothesis that on an average Punjabis is 180 cms tall. For this, a random sample containing 50 Punjabis are considered. The mean and standard deviation of heights of these are found to be 178.9 cms and 3.3 cms. Based on this data, that would you conclude? (Use 5% level of significance)</td><td>4</td><td>1,2</td><td>1,3</td></tr>
</table>

<table>
<tr><td>6</td><td>The following data are got from an investigation.
<table><tr><td>Samples</td><td>Mean</td><td>S D</td><td>sample size</td></tr><tr><td>Sample1</td><td>47.4</td><td>3.1</td><td>400</td></tr><tr><td>Sample2</td><td>50.3</td><td>3.3</td><td>900</td></tr></table>Find out whether the two mean differ significantly? Test at 1% level of significance.</td><td>4</td><td>1,3</td><td>1,2</td></tr>
<tr><td>7</td><td>It is known that an IQ of boys has SD 10 and that an IQ of girls has SD 12. Mean IQ of 200 randomly selected boys is 99 and Mean IQ of 300 randomly selected girls is 97. Can it be concluded that on an average boys and girls have the same IQ? (Use 1% level of significance)</td><td>4</td><td>1,3</td><td>1,2</td></tr>
<tr><td>8</td><td>500 articles from a factory are examined and found to be 2% defective. 800 similar articles from a second factory are found to have only 1.5% defectives. Can it be reasonable concluded that the products of the first factory are inferior to those of the second. (Use 5% level of significance)</td><td>4</td><td>1,2</td><td>1,3</td></tr>
<tr><td>9</td><td>Write the short notes of the following i) sample, ii) Hypothesis, iii) two tail test, iv) type I and type II error</td><td>4</td><td>1,2</td><td>1</td></tr>
<tr><td>10</td><td>A sample of 900 days was taken in a coastal town and it was found that on 100 days the weather was very hot. Obtain the probable limits (both 95% and 99%) of the percentage of very hot weather.</td><td>4</td><td>1,2</td><td>1,3</td></tr>
<tr><td>11</td><td>In an elementary school examination, the mean grade of 32 boys was 72 with a standard deviation of 8, while the mean grade of 36 girls was 75 with a Standard deviation of 6. Test the hypothesis that the performance of girls is better than boys. Use 5% level of significance.</td><td>4</td><td>1,2</td><td>1,3</td></tr>
<tr><td>12</td><td>Random sample of 1000 engineering students from city A and 800 from city B were taken. It was found that 400 students in each of the sample were from payment quota. Does the data reveal a significant difference between the two cities in respect of payment quota students? Use 1% level of significance.</td><td>4</td><td>1,2</td><td>1,3</td></tr>
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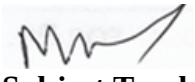

Subject Teacher **H O D** **Director**