

**SCHOOL OF COMPUTER SCIENCE AND APPLICATIONS**

**Odd Semester 2024-2025**

**Assignment IV**

Programme: PG – MCA Course Code: M23DE0101

Semester: I Course Title: Mathematics for Computer Applications

Section: A Name of the Faculty: Dr. M Vinayaka Murthy

Date of Announcement: 21-03-25

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| **Sl.No** | **Assignment Question** | **CO** | **PO** | **PSO** |
| **1.** | 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. | **4** | **1,2** | **1,3** |
| 2 | From the following data, test whether the difference between the proportions in the two samples are significant.   |  |  |  | | --- | --- | --- | |  | Size | Proportion | | Sample I | 1000 | 0.02 | | Sample II | 1200 | 0.01 | | **4** | **1,3** | **1,2** |
| 3. | Intelligence test on two groups of Males and Females gave the following results.   |  |  |  |  | | --- | --- | --- | --- | | Marks | Mean | S D | sample size | | Females | 75 | 15 | 150 | | Males | 70 | 20 | 250 |   is there significant difference in the mean marks obtained by the males and females? Test at 1% level of significance. | **4** | **1,2** | **1,3** |
| 4 | 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 | **4** | **1,2** | **1,3** |
| 5 | 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) | **4** | **1,2** | **1,3** |
| 6 | The following data are got from an investigation.   |  |  |  |  | | --- | --- | --- | --- | | Samples | Mean | S D | sample size | | Sample1 | 47.4 | 3.1 | 400 | | Sample2 | 50.3 | 3.3 | 900 |   Find out whether the two mean differ significantly? Test at 1% level of significance. | **4** | **1,3** | **1,2** |
| 7 | 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) | **4** | **1,3** | **1,2** |
| 8 | 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) | **4** | **1,2** | **1,3** |
| 9 | Write the short notes of the following i) sample, ii) Hypothesis, iii) two tail test, iv) type I and type II error | **4** | **1,2** | **1** |
| 10 | In city A, 38% voters voted for X party. In city B, 35% voters voted for X party. i) Among 70 randomly selected voters from city A, if p1 is the proportion of voters who voted for X party, find the Standard Error (SE) of p1, ii) Among 60 randomly selected voters from city B, if p2 is the proportion of voters who voted for X party, find the Standard Error (SE) of p2 | **4** | **1,2** | **1,3** |



**Subject Teacher H O D Director**