**Quiz 02 (7293)**

**02.10.2023**

**Full Name: ERP ID:**

**Max. Marks: 15 Time Allowed: 45 Minutes.**

**Q1**. To test a two-tailed test, a random sample of n = 24 is obtained from a population that is known to be normally distributed with σ = 12, and we got a sample mean of 47.1. Will the null hypothesis be rejected? Use critical value approach.  **(4)**

**Q2.** A sample of 25 workers found the average overtime hours worked in the previous week was 7.8, with a standard deviation of 4.1 hours. Test the hypothesis that the average for all workers is 5 hours or less. Use a 0.05 level of significance. **(4)**

**Q3.** In a market study for BGI, a local department store, you select a sample of 60 actual and potential clients to interview. Among the questions you wish to answer is whether the clients and non- clients differ in their incomes. The table below gives summary statistics. Can you conclude that there is a difference in the mean incomes of clients and non- clients? Use α = 0.05.  **(7)**

|  |  |  |
| --- | --- | --- |
|  | Clients | Non-Clients |
| Mean income (in $1000s) | 58.7 | 50.4 |
| Standard deviations (in $1000s) | 16.8 | 9.8 |
| Number | 29 | 31 |

***Formulas Sheet***

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