**Quiz 02 (7293)**

**02.10.2023**

**Full Name: ERP ID:**

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

**Q1**. To test a lower-tailed test, a random sample of n = 20 is obtained from a population that is known to be normally distributed with σ = 9, and we got a sample mean of 43. Will the null hypothesis be rejected? Use the p-value approach.  **(4)**

**Q2.** A sample of 35 workers found the average overtime hours worked in the previous week was 6, with a standard deviation of 3.1 hours. Test the hypothesis that the average for all workers is 6 hours or more. 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 significantly higher difference in the mean incomes of clients and non- clients? Use α = 0.05.  **(7)**

|  |  |  |
| --- | --- | --- |
|  | Clients | Non-Clients |
| Mean income (in $1000s) | 56.7 | 48.4 |
| Standard deviations (in $1000s) | 16 | 8.5 |
| Number | 30 | 30 |

***Formulas Sheet***

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