Week 4: Assignment 4

The due date for submitting this assignment has passed.

Due on 2023-02-22, 23:59 IST.

Assignment submitted on 2023-02-19, 12:48 IST

1) In hypothesis testing if the null hypothesis is rejected *1 point*

- no conclusions can be drawn from the test
- the alternative hypothesis is true
- the data must have been accumulated incorrectly
- the sample size has been too small

Yes, the answer is correct.
Score: 1
Accepted Answers:
the alternative hypothesis is true

2) The level of significance is the *1 point*

- maximum allowable probability of Type II error
- maximum allowable probability of Type I error
- same as the confidence coefficient
- same as the p-value

Yes, the answer is correct.
Score: 1
Accepted Answers:
maximum allowable probability of Type I error

3) When the following hypotheses are being tested at a level of significance of alpha *1 point*
H0: Mu ≥ 500
Ha: Mu < 500
the null hypothesis will be rejected if the p-value is

- ≤ alpha
- > alpha
- > Beta/2
- 1 - (alpha/2)

Yes, the answer is correct.
Score: 1
Accepted Answers:
≤ alpha

4) In a two-tailed hypothesis test situation, the test statistic is determined to be t = -2.692. The sample size has been 45. The p-value for this test is *1 point*

- -0.005
- +0.005
- -0.01
- +0.01

Yes, the answer is correct.
Score: 1
Accepted Answers:
+0.01

5) In a lower one-tail hypothesis test situation, the p-value is determined to be 0.2. If the sample size for this test is 51, the t statistic has a value of *1 point*

- 0.849
- -0.849
- 1299
- -1299

Yes, the answer is correct.
Score: 1
Accepted Answers:
-0.849

6) A machine is designed to fill toothpaste tubes with 5.8 ounces of toothpaste. The manufacturer does not want any underfilling or overfilling. The correct hypotheses to be tested are *1 point*

- H0: Mu not equals to 5.8, Ha: Mu = 5.8
- H0: Mu = 5.8, Ha: Mu not equals to 5.8
- H0: Mu > 5.8, Ha: Mu =< 5.8
- H0: Mu >= 5.8, Ha: Mu < 5.8

Yes, the answer is correct.
Score: 1
Accepted Answers:
H0: Mu = 5.8, Ha: Mu not equals to 5.8

7) The quality-control manager at a Li-BATTERY factory needs to determine whether the mean life of a large shipment of Li-Battery is equal to the specified value of 375 hours. The process standard deviation is known to be 100 hours. A random sample of 64 batteries indicates a sample mean life of 350 hours. State the null hypotheses *1 point*

- Mu = 375
- Mu ≤ 375

- Mu = 350
- Mu ≥ 350

Yes, the answer is correct.
Score: 1
Accepted Answers:
Mu = 375

8) In question 7, At the alpha = 0.05 level of significance is there any evidence that the mean life is different from 375 hours? ***1 point***

- Yes, there is
- No, there is not
- None of the above

No, the answer is incorrect.
Score: 0
Accepted Answers:
Yes, there is

9) In question 7, Computed the p-value is: ***1 point***

- 0.0456
- 0.456
- 0.0228
- 0.228

Yes, the answer is correct.
Score: 1
Accepted Answers:
0.0456

10) In question 7, at 95% confidence interval estimate of the population mean life of the battery is: ***1 point***

- 325.5 to 379.5
- 325.5 to 374.5
- 320.5 to 379.5
- 320.5 to 374.5

Yes, the answer is correct.
Score: 1
Accepted Answers:
325.5 to 374.5