X

Unit 8 - Week 5

Course outline

How does an NPTEL online course work?

Week 0

MATLAB

Week 1

Week 2

Week 3

Week 4

Week 5

- Introduction to Analysis of Variance (ANOVA) and comparing precisions (unit?unit=55&lesson=56)
- Protocol for undertaking ANOVA - Part 01 (unit?unit=55&lesson=57)

Assignment 5

The due date for submitting this assignment has passed. Due on 2020-03-04, 23:59 IST.
As per our records you have not submitted this assignment.

Click here for Statistical Tables (https://drive.google.com/open?id=1r1GOf4bgh7rfIvu8O5axkLI7GM1tZvGq) are provided

1) When undertaking t-tests on 7 different samples to find out whether these samples have different means at 98% confidence level, the chances of committing Type 1 error are: ***1 point***

- 7.8 %
- 15.9 %
- 40.8 %
- 22.1 %
- 13.2 %

No, the answer is incorrect.
Score: 0

Accepted Answers:
13.2 %

2) For a sample set given below, the $F_{critical}$ values at 95% and 99% confidence levels, respectively, will be: ***1 point***

- Protocol for undertaking ANOVA - Part 02 (unit?unit=55&lesson=58)
- ANOVA and Least Significant Difference (LSD) (unit?unit=55&lesson=59)
- ANOVA and solved Least Significant Difference example (unit?unit=55&lesson=60)
- **Quiz : Assignment 5 (assessment?name=61)**
- Assignment 5 solutions (unit?unit=55&lesson=72)
- Subjective Assignment 1 (/noc20_cy02/subjective?name=62)
- Quantitative Methods in Chemistry : Week 5 Feedback Form (unit?unit=55&lesson=63)
- Lecture materials (unit?unit=55&lesson=129)

Week 6

Week 7

Week 8

Week 9

Week 10

Week 11

Week 12

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Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
534	359	624	395	567
435	323	498	333	713
487	388	582	372	675
545	402	642	423	728
402	342	597	398	775
519	369	637	354	598
477	346	493	373	689

- 2.69, 4.02
- 5.75, 13.84
- 5.75, 4.02
- 2.69, 13.84
- 2.49, 3.59

No, the answer is incorrect.
Score: 0

Accepted Answers:
2.69, 4.02

3) For the sample set given in Question no. 2, the mean square factor and mean square error values (rounded off to whole numbers) are: ***1 point***

- 123967, 2805
- 298567, 3726
- 126966, 2736
- 8875, 2342
- 98900, 5600

No, the answer is incorrect.
Score: 0

Accepted Answers:
126966, 2736

4) At 99% confidence level, the Least Significant Difference value (rounded off to whole number) for the sample set given in Question 2 is: ***1 point***

- 770
- 344
- 88
- 77
- 34

No, the answer is incorrect.
Score: 0

Accepted Answers:
77

5) For the data set in Q2, the means of following samples are statistically similar at 99% confidence level: ***1 point***

- Sample 1 and Sample 3
- Sample 2 and Sample 3
- Sample 2 and Sample 4
- Sample 3 and Sample 5

- Sample 1, Sample 3 and Sample 5

No, the answer is incorrect.
Score: 0
Accepted Answers:
Sample 2 and Sample 4

Five samples, each containing five readings, were analysed by ANOVA at 95% confidence level. The partial ANOVA table is provided below

Source of Variation	*SS*	*df*	*MS*	*F*
Between Groups	A	D	13924	3.61
Within Groups	B	E	G	
Total	C	F		

Provide the values for A-G.

6) For the samples being compared in above data, the following statement(s) is/are true: ***1 point***

- At 95% confidence level, the means of all the samples are similar
- At 95% confidence level, the means of at least two samples are different
- At 99% confidence level, the means of all the samples are similar
- At 99% confidence level, the means of at least two samples are different
- There is insufficient information to make any inference

No, the answer is incorrect.
Score: 0
Accepted Answers:
At 95% confidence level, the means of at least two samples are different
At 99% confidence level, the means of all the samples are similar

7) For the samples being compared in above data, the least significant difference value at 95% and 99% confidence level, respectively, are: ***1 point***

- 88, 120
- 98, 120
- 120, 88
- 75, 98
- 82, 112

No, the answer is incorrect.
Score: 0
Accepted Answers:
82, 112

8) For two samples having 8 and 10 readings respectively, and standard deviation values of 0.8181 and 0.7172, the $F_{calculated}$ value will be: ***1 point***

- 1.141
- 0.877
- 1.301
- 0.768
- 0.587

No, the answer is incorrect.
Score: 0
Accepted Answers:
1.301

9) For the above data, at 95% and 99% confidence levels, the following holds true: ***1 point***

- Their precisions are considered statistically similar at both the confidence levels
- Their precisions are considered statistically different at both the confidence levels
- While the precisions are statistically similar at 95% confidence level, they are different at 99% confidence level
- While the precisions are statistically different at 95% confidence level, they are similar at 99% confidence level
- We need more information to provide any inference

No, the answer is incorrect.
Score: 0
Accepted Answers:
Their precisions are considered statistically similar at both the confidence levels