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Courses » Advanced Green Manufacturing Systems

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Unit 12 - Week 10

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Course outline

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○ Lecture 35: Introduction to Factorial Experiments

○ Lecture 36: Statistical Analysis in Factorial Experiments

Assignment 10

The due date for submitting this assignment has passed.

As per our records you have not submitted this assignment. **Due on 2019-04-10, 23:59 IST.**

1) Consider a 2-factor factorial experiment with factor A and factor B. The factor A has 5 levels and the factor B has 3 levels. **2 points**
 What are the number of combinations each trial of this experiment will have?

- 9
- 15
- 2
- 8

No, the answer is incorrect.
Score: 0

Accepted Answers:
 15

2) Consider a two factor factorial experiment with each factor having two distinct levels as "Low" and "High". **2 points**
 The experiment was conducted and the response has been recorded as given in the table below.

		Factor B	
		Low	High
Factor A	Low	15	25
	High	19	33

What is the main effect of factor A?

- 6

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3) Consider a two factor factorial experiment with each factor having two distinct levels as "Low" and "High". **2 points**

The experiment was conducted and the response has been recorded as given in the table below.

		Factor B	
		Low	High
Factor A	Low	15	25
	High	19	33

What is the main effect of factor B?

- 15
- 30
- 12
- 24

No, the answer is incorrect.

Score: 0

Accepted Answers:

12

4) Consider a two factor factorial experiment with each factor having two distinct levels as "Low" and "High". **2 points**

The experiment was conducted and the response has been recorded as given in the table below.

		Factor B	
		Low	High
Factor A	Low	50	65
	High	74	32

As per the response data of the experiment, we do not have an interaction effect between the factors. Is the statement above True or False?

- True
- False

No, the answer is incorrect.

Score: 0

Accepted Answers:

False

5) Consider a 2-factor factorial experiment with factor A and factor B. Factor A has 3 levels and factor B has 2 levels. Also, the experimental design needs two replications for each combination of the factors. **2 points**

Calculate the following statistic for the statistical analysis.

1. Degree of freedom of A
2. Degree of freedom of B
3. Degree of freedom of Error

- Degree of freedom of A: 1 Degree of freedom of B: 1 Degree of freedom of Error: 5
- Degree of freedom of A: 2 Degree of freedom of B: 1 Degree of freedom of Error: 9
- Degree of freedom of A: 3 Degree of freedom of B: 2 Degree of freedom of Error: 2
- Degree of freedom of A: 2 Degree of freedom of B: 1 Degree of freedom of Error: 6

No, the answer is incorrect.

Score: 0

Accepted Answers:

Degree of freedom of A: 2 Degree of freedom of B: 1 Degree of freedom of Error: 6



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