Assignment 6

Due on 2021-02-02, 23:59 IST.

Course outline
In the following, if you do not respond to the assignment by the due date, all the current options on the assignment are closed.

Instructions to candidates
- Please read all the instructions carefully before you start the assignment.
- You have to submit your solutions in the form of a PDF file.
- You must submit your solutions by the due date.
- You can submit multiple drafts before the due date.
- Late submissions will not be accepted.
- All assignments must be completed individually.
- You are not allowed to discuss the assignments with anyone else.

Week 1
1. Which of the following statements are true?
   - a) 1 + 1 = 2
   - b) 1 + 1 = 3
   - c) 1 + 1 = 1
   - d) 1 + 1 = 0

   1 point

Week 2
2. Let (X, ≤) be a linearly ordered space. If x is a positive integer and \( x \in [0,1] \), is an arbitrary order of points in \( x \), then there exists a non-zero function \( f : \mathbb{R} \to \mathbb{R} \) such that \( f(x) \) for the least \( x \). Every vector span is non-trivial. Every vector space is non-trivial. The vector space is non-trivial. The vector space is trivial.
   - a) Every vector span is non-trivial.
   - b) Every vector space is non-trivial.
   - c) Every vector span is trivial.
   - d) Every vector space is trivial.

   1 point

Week 3
3. Let \( A \) be the closed ball in \( X \). Which of the following statements are true?
   - a) \( A \) is a closed subset of \( X \).
   - b) \( A \) is an open subset of \( X \).
   - c) \( A \) is dense in \( X \).
   - d) \( A \) is not a closed subset of \( X \).

   1 point

Week 4
4. Which of the following statements are true?
   - a) Every norm is bounded.
   - b) Every norm is a bounded function.
   - c) Every norm is an open function.
   - d) Every norm is a closed function.

   1 point

Week 5
5. Which of the following statements are true?
   - a) Every convergent sequence is bounded.
   - b) Every bounded sequence is convergent.
   - c) Every bounded sequence is convergent.
   - d) Every bounded sequence is bounded.

   1 point

Week 6
6. Which of the following statements are true?
   - a) Every convergent sequence is bounded.
   - b) Every bounded sequence is convergent.
   - c) Every bounded sequence is convergent.
   - d) Every bounded sequence is bounded.

   1 point

Week 7
7. Which of the following statements are true?
   - a) Every norm is bounded.
   - b) Every norm is a bounded function.
   - c) Every norm is an open function.
   - d) Every norm is a closed function.

   1 point

Week 8
8. Which of the following statements are true?
   - a) Every convergent sequence is bounded.
   - b) Every bounded sequence is convergent.
   - c) Every bounded sequence is convergent.
   - d) Every bounded sequence is bounded.

   1 point

Week 9
9. Which of the following statements are true?
   - a) Every norm is bounded.
   - b) Every norm is a bounded function.
   - c) Every norm is an open function.
   - d) Every norm is a closed function.

   1 point

Week 10
10. Which of the following statements are true?
    - a) Every convergent sequence is bounded.
    - b) Every bounded sequence is convergent.
    - c) Every bounded sequence is convergent.
    - d) Every bounded sequence is bounded.

    1 point

Week 11
11. Which of the following statements are true?
    - a) Every norm is bounded.
    - b) Every norm is a bounded function.
    - c) Every norm is an open function.
    - d) Every norm is a closed function.

    1 point

Week 12
12. Which of the following statements are true?
    - a) Every convergent sequence is bounded.
    - b) Every bounded sequence is convergent.
    - c) Every bounded sequence is convergent.
    - d) Every bounded sequence is bounded.

    1 point

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Accepted Answers
The answer is: "Yes, the answer is correct.

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