

12 Lecture - MTH101

Important Mcqs

1. **What is continuity?**

- A) A property of a function that relates to its smoothness
- B) A property of a function that relates to its differentiability
- C) A property of a function that relates to its integrability
- D) A property of a function that relates to its convergence

Answer: A) A property of a function that relates to its smoothness

2. **What is the importance of continuity in calculus?**

- A) It allows us to define the derivative and integral of a function
- B) It allows us to calculate the area under the curve
- C) It allows us to partition the interval into smaller subintervals
- D) It allows us to describe the behavior of curves in space

Answer: A) It allows us to define the derivative and integral of a function

3. **How is continuity related to the derivative of a function?**

- A) If a function is continuous, then the derivative exists
- B) If a function is discontinuous, then the derivative exists
- C) If a function is continuous, then the derivative does not exist
- D) If a function is discontinuous, then the derivative does not exist

Answer: A) If a function is continuous, then the derivative exists

4. **How is the concept of continuity related to limits?**

- A) The concept of continuity is closely related to the concept of limits
- B) The concept of continuity is not related to the concept of limits
- C) The concept of continuity is the same as the concept of limits
- D) The concept of continuity is the opposite of the concept of limits

Answer: A) The concept of continuity is closely related to the concept of limits

5. **What is the integral of a function?**

- A) The slope of the tangent line to the curve
- B) The limit of the difference quotient
- C) The area under the curve
- D) The maximum value of the function

Answer: C) The area under the curve

6. **How is the concept of continuity related to the integral of a function?**

- A) The concept of continuity allows us to make precise approximations of the area under the curve

- B) The concept of continuity does not relate to the integral of a function
- C) The concept of continuity allows us to calculate the maximum value of the function
- D) The concept of continuity allows us to partition the interval into smaller subintervals

Answer: A) The concept of continuity allows us to make precise approximations of the area under the curve

7. What is the limit of a function?

- A) The value that the function approaches as the input variable approaches a particular value
- B) The maximum value of the function
- C) The minimum value of the function
- D) The slope of the tangent line to the curve

Answer: A) The value that the function approaches as the input variable approaches a particular value

8. How is continuity related to making predictions about the behavior of a function?

- A) The concept of continuity allows us to make predictions about the behavior of a function as it approaches a particular point by calculating limits precisely.
- B) The concept of continuity has no relation to making predictions about the behavior of a function
- C) The concept of continuity allows us to describe the behavior of curves in space
- D) The concept of continuity allows us to define the derivative and integral of a function

Answer: A) The concept of continuity allows us to make predictions about the behavior of a function as it approaches a particular point by calculating limits precisely.

9. How is continuity important in analytical geometry?

- A) It allows us to define the derivative and integral of a function
- B) It allows us to describe the behavior of curves in space
- C) It allows us to calculate the area under the curve
- D) It allows us to partition**