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