## 22 Lecture - MTH101

## Important Mcqs

## What is a relative extremum?

A. A point where the function is undefined.
B. A point where the function has a vertical tangent.
C. A local maximum or minimum value of a function within a given interval.
D. A point where the function has a horizontal tangent.

Answer: C. A local maximum or minimum value of a function within a given interval.

## How do you find relative extrema?

A. Take the limit of the function as x approaches infinity.
B. Take the limit of the function as x approaches negative infinity.
C. Take the derivative of the function and find the critical points.
D. Take the integral of the function.

Answer: C. Take the derivative of the function and find the critical points.

## What is a critical point in calculus?

A. A point where the function is undefined.
B. A point where the function has a vertical tangent.
C. A point where the derivative of the function is zero or undefined.
D. A point where the function has a horizontal tangent.

Answer: C. A point where the derivative of the function is zero or undefined.

## What is the second derivative test?

A. A method used to determine whether a critical point corresponds to a relative maximum, relative minimum, or neither.
B. A method used to find the derivative of the function.
C. A method used to find the antiderivative of the function.
D. A method used to find the limit of the function as x approaches infinity.

Answer: A. A method used to determine whether a critical point corresponds to a relative maximum, relative minimum, or neither.

## What is a relative maximum?

A. The highest point of a function within a given interval.
B. The lowest point of a function within a given interval.
C. A point where the function is undefined.
D. A point where the function has a vertical tangent.

Answer: A. The highest point of a function within a given interval.

## What is a relative minimum?

A. The highest point of a function within a given interval.
B. The lowest point of a function within a given interval.
C. A point where the function is undefined.
D. A point where the function has a vertical tangent.

Answer: B. The lowest point of a function within a given interval.

## Can a function have multiple relative extrema?

A. Yes, a function can have multiple relative extrema.
B. No, a function can only have one relative extremum.
C. It depends on the type of function.
D. It depends on the interval.

Answer: A. Yes, a function can have multiple relative extrema.

## What is the second derivative of a function?

A. The derivative of its antiderivative.
B. The integral of its derivative.
C. The derivative of its first derivative.
D. The integral of its second derivative.

Answer: C. The derivative of its first derivative.

## What is a point of inflection?

A. A point where the function is undefined.
B. A point where the function has a vertical tangent.
C. A point where the function changes concavity.
D. A point where the function has a horizontal tangent.

Answer: C. A point where the function changes concavity.

## What is the critical number of a function?

A. The highest point of the function.
B. The lowest point of the function.
C. The point where the function is undefined.
D. The value of $x$ that makes the derivative zero or undefined.

Answer: D . The value of x that makes the derivative zero or undefined.

