

Started on Sunday, 20 December 2020, 10:44 AM

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Completed on Sunday, 20 December 2020, 10:46 AM

Time taken 1 min 59 secs

Marks 5.00/5.00

Grade 25.00 out of 25.00 (100%)

Question 1

Correct

Mark 1.00 out of 1.00

Chi-square test measures the discrepancy between

Select one:

- ☒ a. frequencies ✓
- ☐ b. mean
- ☐ c. variance
- ☐ d. standard deviation

Your answer is correct.

The correct answer is: frequencies

Question 2

Correct

Mark 1.00 out of 1.00

In semi average method , the time series is divided into

Select one:

- ☐ a. five equal halves
- ☐ b. four equal halves
- ☐ c. three equal halves
- ☒ d. two equal halves ✓

Your answer is correct.

The correct answer is: two equal halves

Question 3

Correct

Mark 1.00 out of 1.00

In analysis of variance the total variance is splitted into

Select one:

- ☐ a. five types
- ☐ b. four types
- ☐ c. six types
- ☒ d. two types ✓

Your answer is correct.

The correct answer is: two types

Question 4

Correct

Mark 1.00 out of 1.00

Seasonal variations are called

Select one:

- ☐ a. long term variations
- ☒ b. short term variations ✓
- ☐ c. random variation
- ☐ d. cyclic variations

Your answer is correct.

The correct answer is: short term variations

Question 5

Correct

Mark 1.00 out of 1.00

Student's t-test is applicable in case of

Select one:

- ☒ a. small samples of size less than 30 ✓
- ☐ b. large samples
- ☐ c. both (i) and (ii) are true
- ☐ d. none of these

Your answer is correct.

The correct answer is: small samples of size less than 30

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Completed on Wednesday, 18 November 2020, 5:09 PM

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Question 1

Complete

Marked out of
1.00

If derivative of the function becomes zero, which of the method is not applicable to calculate the root of the given equation?

Select one:

- ☒ a. Newton's method
- ☐ b. Bisection method
- ☐ c. d
- ☐ d. False position method

Your answer is correct.

Question 2

Complete

Marked out of
1.00

If in interval (a, b), there is a root of any equation, then which condition must be true

(a) $f(a)$ and $f(b)$ are positive

(b) $f(a)$ and $f(b)$ are negative

(c) $f(a)$ and $f(b)$ are of opposite sign

(d) none of these

Select one:

- ☐ a
- ☐ b
- ☒ c
- ☐ d

Your answer is correct.

Question 3

Complete

Marked out of
1.00

In bisection method , an initial interval required ?

Select one:

- ☐ a. can't say
- ☐ b. false
- ☐ c. some time
- ☒ d. true

Your answer is correct.

Question 4

Complete

Marked out of
1.00

What type of difference table is required to apply Newton backward interpolation formula?

Select one:

- ☐ a. Divided difference table
- ☐ b. forward difference table
- ☒ c. backward difference table
- ☐ d. none of these

Your answer is correct.

Question 5

Complete

Marked out of
1.00

The nature of Gauss Seidel method to solve simultaneous linear equation is

Select one:

- ☒ a. Iterative
- ☐ b. Direct
- ☐ c. Elimination
- ☐ d. none of these

Your answer is correct.

Question 6

Complete

Marked out of
1.00

Normalized floating point representation of 0.0085×10^6 is

Select one:

- ☐ a. 0.8500E08
- ☒ b. 0.8500E04
- ☐ c. 0.8500E06
- ☐ d. none

Your answer is correct.

Question 7

Complete

Marked out of
1.00

How much maximum order differences are possible, If there are 6 values of dependent variable

Select one:

- ☒ a. 5th order
- ☐ b. 4th order
- ☐ c. 6th order
- ☐ d. d

Your answer is correct.

Question 8

Complete

Marked out of
1.00

Stirling's formula is the average of

Select one:

- ☒ a. Gauss forward and Backward formula
- ☐ b. Gauss forward and Newton forward formula
- ☐ c. Gauss forward and Newton backward formula
- ☐ d. none of these

Your answer is correct.

Question 9

Complete

Marked out of
1.00**Regarding factorial notations, which one is true?**

- (a) $x^{(3)} = x(x-1)(x-2), h = 1$ (b) $x^{(3)} = x(x+1)(x+2), h = 1$
- (c) $x^{(3)} = (x+1)(x+2)(x+3), h = 1$ (d) none of these

Select one:

- ☒ a
- ☐ b
- ☐ c
- ☐ d

Your answer is correct.

Question 10

Complete

Marked out of
1.00If interpolation is required at a point which lies in the last of the given range of x , which formula will be applicable?

Select one:

- ☐ a. Newton's forward formula
- ☒ b. Newton's backward formula
- ☐ c. Gauss forward formula
- ☐ d. none of these

Your answer is correct.



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Time taken 3 mins 22 secs

Grade 5.00 out of 5.00 (100%)

Question 1

Complete

Mark 1.00 out of 1.00

Q1. The polynomial in variable x have degree 3 is called,

- a) Linear
- b) Quadratic
- c) Cubic
- d) All of above

Select one:

- ☒ c
- ☐ a
- ☐ d
- ☐ b

Your answer is correct.

Question 2

Complete

Mark 1.00 out of 1.00

To find the root of equation $f(x)=0$, in (a,b) the false position method is given as

Select one:

- ☐ a.
$$\frac{af(b)-b(f(a))}{f(a)-f(b)}$$
- ☐ b.
$$\frac{bf(a)-af(a)}{f(a)-f(b)}$$
- ☐ c.
$$\frac{bf(b)-af(b)}{f(a)-f(b)}$$
- ☒ d.
$$\frac{af(b)-bf(a)}{f(b)-f(a)}$$

Your answer is correct.

Question 3

Complete

Let h be the finite difference, then forward difference operator is defined by

Mark 1.00 out of 1.00

Select one:

- ☐ a. $f(x-h)-f(x)$
- ☐ b. $f(x)-f(x+h)$
- ☒ c. $f(x+h)-f(x)$
- ☐ d. All of the Above

Your answer is correct.

Question 4

Complete

Mark 1.00 out of 1.00

If the values of independent variable are not equally spaced, then we interpolate using

Select one:

- ☐ a. Bessel's Interpolation formula
- ☒ b. Lagrange's Interpolation formula
- ☐ c. Stirling's formula
- ☐ d. Newton Gregory Forward difference formula

Your answer is correct.

Question 5

Complete

Mark 1.00 out of 1.00

If M is a constant, then the first backward difference of M is

Select one:

- ☐ a. M
- ☐ b. 1
- ☒ c. 0
- ☐ d. $f(M)-f(0)$

Your answer is correct.

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Grade 5.00 out of 5.00 (100%)

Question **1**
Correct
Mark 1.00 out of 1.00

If the intervals are unequal, derivative can be find by

- Select one:
- ☐ i. Newton divided difference method
 - ☐ ii. Lagrange interpolation formula
 - ☒ iii. (i) And (ii) both are correct ✓
 - ☐ iv. (i) and (ii) both are incorrect

Your answer is correct.
The correct answer is: (i) And (ii) both are correct

Question **2**
Correct
Mark 1.00 out of 1.00

If the value of the derivation is to be find near to mid of the table, we use

- Select one:
- ☐ Newton forward
 - ☐ Newton backword
 - ☒ Bessel formula ✓
 - ☐ all are incorrect

Your answer is correct.
The correct answer is: Bessel formula

Question **3**
Correct
Mark 1.00 out of 1.00

Using Lagrange's interpolation formula, the derivative at any point

- Select one:
- ☐ i. can be found without finding the polynomial
 - ☒ ii. can be found only after finding the polynomial ✓
 - ☐ 1.
 - ☐ iii. (i) and (ii) both are correct
 - ☐ iv. (i) and (ii) both are incorrect

Your answer is correct.
The correct answer is: can be found only after finding the polynomial

Question 4

Correct

Mark 1.00 out of 1.00

Simpson's 1/3 rule is applicable when n is

Select one:

- ☒ even natural number ✓
- ☐ odd natural number
- ☐ any natural number
- ☐ none of these

Your answer is correct.

The correct answer is: even natural number

Question 5

Correct

Mark 1.00 out of 1.00

In numerical integration when the number of subintervals (n) is 7 then we use

Select one:

- ☒ Trapezoidal rule ✓
- ☐ Weddle's rule
- ☐ Boole's rule
- ☐ None of the above

Your answer is correct.

The correct answer is: Trapezoidal rule

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Started on Saturday, 19 December 2020, 8:00 PM
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Completed on Saturday, 19 December 2020, 8:01 PM
Time taken 1 min 7 secs
Grade 5.00 out of 5.00 (100%)

Question **1**
Complete
Mark 1.00 out of 1.00

Given differentiation formula is known as

$$\left(\frac{dy}{dx}\right)_{x=a} = \frac{1}{h} \left[\Delta y_0 - \frac{1}{2} \Delta^2 y_0 + \frac{1}{3} \Delta^3 y_0 - \frac{1}{4} \Delta^4 y_0 + \frac{1}{5} \Delta^5 y_0 - \dots \right]$$

Select one:

- ☒ Newton forward difference formula
- ☐ Newton backward difference formula
- ☐ Lagrange's formula
- ☐ Gauss's formula

Question **2**
Complete
Mark 1.00 out of 1.00

The numerical solution of a first order differential equation will give a result is

Select one:

- ☐ A set of tabulated values of x and y
- ☒ Value of x and y
- ☐ Zero
- ☐ None of the above

Question **3**
Complete
Mark 1.00 out of 1.00

Number of normal equations in fitting of parabola

Select one:

- ☐ 1
- ☐ 2
- ☒ 3
- ☐ 4

Question **4**
Complete
Mark 1.00 out of 1.00

In numerical integration when the number of sub intervals (n) is a multiple of 4, then we use

Select one:

- ☐ Simpson's 3/8 rule
- ☒ Boole's rule
- ☐ Weddle's rule
- ☐ None of these

Question **5**

Complete

Mark 1.00 out of 1.00

Simpson's 1/3 rule is applicable when n is

Select one:

- ☒ even natural number
- ☐ odd natural number
- ☐ any natural number
- ☐ none of these



QUIZ 1 QUIZ 2 QUIZ 3 QUIZ 4 QUIZ 5

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Completed on Thursday, 3 December 2020, 5:43 PM
Time taken 8 mins 29 secs
Grade **5.00** out of 5.00 (**100%**)

Question **1**
Correct
Mark 1.00 out of 1.00

If K is constant then first forward difference of K is

Select one:

- ☐ a. 1
- ☒ b. 0 ✓
- ☐ c. $f(k) - f(0)$
- ☐ d. None of the above

Your answer is correct.
The correct answer is: 0

Question **2**
Correct
Mark 1.00 out of 1.00

Interpolation formulae are based on the fundamental assumption that data can be expressed as

Select one:

- ☐ a. a linear function
- ☐ b. a quadratic function
- ☒ c. a polynomial ✓
- ☐ d. None of the above

Your answer is correct.
The correct answer is: a polynomial

Question **3**
Correct
Mark 1.00 out of 1.00

Let h be a finite difference, then forward difference operator of $f(x)$ is defined by

Select one:

- ☒ a. $f(x+h) - f(x)$ ✓
- ☐ b. $f(x) - f(x-h)$
- ☐ c. $f(x) - f(x+h)$
- ☐ d. None of the above

Your answer is correct.
The correct answer is: $f(x+h) - f(x)$

Question 4

Correct

Mark 1.00 out of 1.00

Gauss backward interpolation formula is suitable to interpolate the value of y

Select one:

- ☐ a. in beginning of the table
- ☐ b. in mid of the table
- ☒ c. in last of the table ✓
- ☐ d. none of the above

Your answer is correct.

The correct answer is: in last of the table

Question 5

Correct

Mark 1.00 out of 1.00

Lagrange's interpolation formula is used when values of independent variable are

Select one:

- ☐ a. equally spaced
- ☐ b. not equally spaced
- ☒ c. both of above ✓
- ☐ d. None of above

Your answer is correct.

The correct answer is: both of above

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Completed on Saturday, 5 December 2020, 8:38 PM

Time taken 4 mins 4 secs

Question **1**

Complete

Marked out of
1.00

If $y = \frac{1}{x}$, $y' = ?$

(a) $\frac{-1}{x}$

(c) $\frac{1}{x^2}$

(b) $\frac{-1}{x^2}$

(d) none of these

Select one:

- ☐ a
- ☒ b
- ☐ c
- ☐ d

Your answer is correct.

Question **2**

Complete

Marked out of
1.00

Central interpolation formula is used to find the derivatives formula when it is required at the

Select one:

- ☐ a. beginning of the table
- ☒ b. center of the table
- ☐ c. center of the table
- ☐ d. none of these

Your answer is correct.

Question 3

Complete

Marked out of 1.00

First derivatives formula at the point $x = x_n$ is given by

- (a) $\frac{dy}{dx} = \frac{1}{h} \left[\nabla y_n - \frac{1}{2} \nabla^2 y_n + \frac{1}{3} \nabla^3 y_n - \frac{1}{4} \nabla^4 y_n + \dots \right]$
- (b) $\frac{dy}{dx} = \frac{1}{h} \left[\nabla y_n - \frac{1}{2} \nabla^2 y_n - \frac{1}{3} \nabla^3 y_n - \frac{1}{4} \nabla^4 y_n - \dots \right]$
- (c) $\frac{dy}{dx} = \frac{1}{h} \left[\nabla y_n + \frac{1}{2} \nabla^2 y_n + \frac{1}{3} \nabla^3 y_n + \frac{1}{4} \nabla^4 y_n + \dots \right]$
- (d) none of these

Select one:

- ☐ a
- ☐ b
- ☒ c
- ☐ d

Your answer is correct.

Question 4

Complete

Marked out of 1.00

Area under the curve bounded by x axis, x=a and x=b is calculated by

Select one:

- ☒ a. Numerical integration formula
- ☐ b. Numerical differentiation formula
- ☐ c. Interpolation formula
- ☐ d. none of these

Your answer is correct.

Question 5

Complete

Marked out of 1.00

Sum of the series $1^2+2^2+3^2+ \dots + n^2$ is equal to

- (a) $\frac{n.(n+1)}{2}$
- (b) $\left[\frac{n.(n+1)}{2} \right]^2$
- (c) $\frac{n.(n+1)(2n+1)}{6}$
- (d) none of these

Select one:

- ☐ a
- ☐ b
- ☒ c
- ☐ d

Your answer is correct.



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Grade **5.00** out of 5.00 (**100%**)

Question **1**

Complete

Not graded

Enter your Full Name and Roll number

Roll Number: 1901018176

Course Code and Name: mt202

Program: BCA

Year /Semester: 2nd/3rd

Section/Group: C

Question **2**

Complete

Mark 1.00 out of 1.00

In test of significance we use student's t test when

Select one:

- ☐ a. Sample size is greater then 30
- ☒ b. Sample size is less than 30
- ☐ c. For any sample irrespective of sample size.
- ☐ d. None of the Above

Question **3**

Complete

Mark 1.00 out of 1.00

The number of individuals in a Sample is known as

Select one:

- ☐ a. Sample value
- ☐ b. Sample parameter
- ☒ c. Sample size
- ☐ d. None of the Above

Question **4**

Complete

Mark 1.00 out of 1.00

The statistical constants of the population such as mean, variance etc are known as

Select one:

- ☐ a. Sample
- ☒ b. Parameters
- ☐ c. Critical values
- ☐ d. All of the above

Question **5**

Complete

Mark 1.00 out of 1.00

In test of significance, the hypothesis which is being tested is known as

Select one:

- ☐ a. Alternate hypothesis
- ☐ b. Critical region
- ☒ c. Null hypothesis
- ☐ d. Both null and alternate hypothesis

Question **6**

Complete

Mark 1.00 out of 1.00

The statistical constants of the sample are known as

Select one:

- ☐ a. Parameter
- ☐ b. Sample value
- ☐ c. Sample size
- ☒ d. Statistic



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Time taken 4 mins 54 secs
Grade **5.00** out of 5.00 (**100%**)

Question **1**
Correct
Mark 1.00 out of 1.00

Q. In Euler's method $y_{n+1} =$
a) y_n
b) $y_n + f(x_n, y_n)$
c) $y_n + hf(x_n, y_n)$
d) None of these

Select one:

- ☐ a
- ☐ b
- ☒ c ✓
- ☐ d

Your answer is correct.
The correct answer is: c

Question **2**
Correct
Mark 1.00 out of 1.00

Quadratic equations always fit a

Select one:

- ☐ Straight line
- ☒ Parabola ✓
- ☐ Both of the above
- ☐ None of the above

Your answer is correct.
The correct answer is: Parabola

Question **3**
Correct
Mark 1.00 out of 1.00

The most common and accurate Runge-Kutta method we used

Select one:

- ☐ First order Runge-Kutta method
- ☐ Second order Runge-Kutta method
- ☐ Third order Runge-Kutta method
- ☒ Fourth order Runge-Kutta method ✓

Your answer is correct.
The correct answer is: Fourth order Runge-Kutta method

Question 4

Correct

Mark 1.00 out of 1.00

Select one:

- ☒ a ✓
- ☐ b
- ☐ c
- ☐ d

Your answer is correct.

The correct answer is: a

Question 5

Correct

Mark 1.00 out of 1.00

The general problem of finding equations of approximating curves which fit a given data is called

Select one:

- ☒ Curve fitting ✓
- ☐ Approximating curve
- ☐ Linear form
- ☐ None of the above

Your answer is correct.

The correct answer is: Curve fitting

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UNIT 4

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Completed on Friday, 11 December 2020, 5:43 PM

Time taken 2 mins

Question
1

Complete

Marked
out of
1.00

How much maximum order differences possible, If there are 5 values dependent variable

(a) 5th order

(b) 4th order

(c) 6th order

(d) none of these

Select one:

- ☐ a
- ☒ b
- ☐ c
- ☐ d

Your answer is correct.

Question
2

Complete

Marked
out of
1.00

The technique for computing the value of the function within the given range of argument is called

(a) interpolation

(b) extrapolation

(c) inverse interpolation

(d) none of these

Select one:

- ☒ a
- ☐ b
- ☐ c
- ☐ d

Your answer is correct.

Question

3

Complete

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Which of the following relation is true?

(a) $\mu = \frac{1}{2} (E^{\frac{1}{2}} + E^{-\frac{1}{2}})$

(b) $\mu = \frac{1}{2} (E^{\frac{1}{2}} - E^{-\frac{1}{2}})$

(c) $\mu = (E^{\frac{1}{2}} - E^{-\frac{1}{2}})$

(d) none of these

Select one:

- ☒ a
- ☐ b
- ☐ c
- ☐ d

Your answer is correct.

Question

4

Complete

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If interpolation is required at a point which lies in the last of the given range of x, which formula will be applicable?

(a) Newton's forward formula

(b) Newton's backward formula

(c) Gauss forward formula

(d) none of these

Select one:

- ☐ a
- ☒ b
- ☐ c
- ☐ d

Your answer is correct.

Question

5

Complete

Marked
out of
1.00

Regarding factorial notations, which one is true?

(a) $x^{(3)} = x(x-1)(x-2), h = 1$

(b) $x^{(3)} = x(x+1)(x+2), h = 1$

(c) $x^{(3)} = (x+1)(x+2)(x+3), h = 1$

(d) none of these

Select one:

- ☒ a
- ☐ b
- ☐ c
- ☐ d

Your answer is correct.

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Time taken 1 min 17 secs
Grade **5.00** out of 5.00 (**100%**)

Question **1**
Correct
Mark 1.00 out of 1.00

Simpson's 3/8 rule should be used when

Select one:

- ☐ n is multiple of 2
- ☐ n is any positive number
- ☒ n is multiple of 3 ✓
- ☐ None of these

Your answer is correct.
The correct answer is: n is multiple of 3

Question **2**
Correct
Mark 1.00 out of 1.00

In numerical integration when the number of sub intervals (n) is a multiple of 4, then we use

Select one:

- ☐ Simpson's 3/8 rule
- ☒ Boole's rule ✓
- ☐ Weddle's rule
- ☐ None of these

Your answer is correct.
The correct answer is: Boole's rule

Question **3**
Correct
Mark 1.00 out of 1.00

Numerical differentiation gives

Select one:

- ☐ Exact value
- ☒ Approximate value ✓
- ☐ No value
- ☐ Negative value

Your answer is correct.
The correct answer is: Approximate value

Question 4

Correct

Mark 1.00 out of 1.00

To apply trapezoidal rule, always divide the given range of integration into n parts, where n is:

Select one:

- ☐ Even
- ☐ Odd
- ☒ 1, 2, 3, ... ✓
- ☐ 5, 6, 7, ...

Your answer is correct.

The correct answer is: 1, 2, 3, ...

Question 5

Correct

Mark 1.00 out of 1.00

Select one:

- ☐ 4
- ☒ 5 ✓
- ☐ 6
- ☐ Can't define

Your answer is correct.

The correct answer is: 5

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Grade **25.00** out of 25.00 (**100%**)

Question **1**
Correct
Mark 1.00 out of 1.00

The second order Runge Kutta method is

Select one:

- ☐ Euler's method
- ☒ modified Euler's method ✓
- ☐ Taylor's series method
- ☐ None of the above

Your answer is correct.
The correct answer is: modified Euler's method

Question **2**
Correct
Mark 1.00 out of 1.00

Equations by solving least square methods are known as

Select one:

- ☒ Normal equations ✓
- ☐ Auxiliary equations
- ☐ Both of the above
- ☐ None of these

Your answer is correct.
The correct answer is: Normal equations

Question **3**
Correct
Mark 1.00 out of 1.00

There is a class of methods called - - - - which do not require the calculations of higher order derivatives and give greater accuracy.

Select one:

- ☐ Euler's method
- ☐ Euler's modified method
- ☒ Runge-Kutta method ✓
- ☐ None

Your answer is correct.
The correct answer is: Runge-Kutta method

Question 4

Correct

Mark 1.00 out of 1.00

Number of normal equations in fitting of straight lines

Select one:

- ☐ 1
- ☒ 2 ✓
- ☐ 3
- ☐ 4

Your answer is correct.

The correct answer is: 2

Question 5

Correct

Mark 1.00 out of 1.00

Q . Given $\frac{dy}{dx} = \frac{y - x}{y + x}$ with $y = 1$ for $x = 0$. Find y approximately for $x = 0.1$ by Euler's method.

Select one:

- ☐ 0.1
- ☒ 1.1 ✓
- ☐ 2.1
- ☐ 3.1

Your answer is correct.

The correct answer is: 1.1

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