Started on	Sunday, 6 February 2022, 2:01 PM
State	Finished
Completed on	Sunday, 6 February 2022, 2:58 PM
Time taken	57 mins 3 secs
Grade	**50** out of 50 (**100%**)

Question 1

Correct

Mark 1 out of 1

If a polynomial of degree *n* has more than *n* zeros, then the polynomial is

a. zero everywhere ✔

b. not defined

c. Quadratic

d. Cubic

Your answer is correct.

The correct answer is:
zero everywhere

Response history

Step	Time	Action	State	Marks
1	6/02/22, 14:01	Started	Not yet answered	
2	6/02/22, 14:02	Saved: zero everywhere	Answer saved	
3	**6/02/22, 14:58**	**Attempt finished**	**Correct**	**1**

Question 2

Correct

Mark 1 out of 1

to truncate the number x= 34.3376 to three decimal places

Select one:

- a. 34.336
- b. 34.338
- c. None of them
- d. 43.337
- e. 34.337 ✔

Your answer is correct.

The correct answer is: 34.337

Response history

Step	Time	Action	State	Marks
1	6/02/22, 14:01	Started	Not yet answered	
2	6/02/22, 14:02	Saved: 34.337	Answer saved	
3	**6/02/22, 14:58**	**Attempt finished**	**Correct**	**1**

Question 3

Correct

Mark 1 out of 1

Let F(x)=xe^x Find f'(2) (Approximate to 2 digits

Answer: 22.17 ✔

The correct answer is: 22.17

Response history

Step	Time	Action	State	Marks
1	6/02/22, 14:01	Started	Not yet answered	
2	6/02/22, 14:12	Saved: 22.17	Answer saved	
3	**6/02/22, 14:58**	**Attempt finished**	**Correct**	**1**

Question 4

Correct

Mark 1 out of 1

Let F(x)= ln(x) and h=0.1 and x0= 1.8 estimate the error (e) (approximate to 2 digits)

Answer: 0.01 ✔

The correct answer is: 0.01

Response history

Step	Time	Action	State	Marks
1	6/02/22, 14:01	Started	Not yet answered	
2	6/02/22, 14:12	Saved: 0.01	Answer saved	
3	**6/02/22, 14:58**	**Attempt finished**	**Correct**	**1**

Question 5

Correct

Mark 1 out of 1

One root of the equation e^x-3x^2=0 lies in the interval [3,4], the least number of iterations of the bisection method, so that

|Error|< 0.001

is approximated to an integer

- a. 15
- b. 12
- c. 8
- d. 10 ✔
- e. none of them

Your answer is correct.

The correct answer is:
10

Response history

Step	Time	Action	State	Marks
1	6/02/22, 14:01	Started	Not yet answered	
2	6/02/22, 14:02	Saved: 10	Answer saved	
3	**6/02/22, 14:58**	**Attempt finished**	**Correct**	**1**

Question 6

Correct

Mark 2 out of 2

Create a linear system to model this situation:

A woman is 3 times as old as her son. In thirteen years, she will be 2 times as old as her son will be.

a. $w = s + 3$
$w + 13 = 2s$

b. None of them

c. $w = 3s$
$w = 2s$

d. $w = 3s$
$s + 13 = 2(w + 13)$

e. $w = 3s$
$w + 13 = 2(s + 13)$ ✔

Your answer is correct.

The correct answer is:
$w = 3s$
$w + 13 = 2(s + 13)$

Response history

Step	Time	Action	State	Marks
1	6/02/22, 14:01	Started	Not yet answered	
2	6/02/22, 14:03	Saved: w = 3s w + 13 = 2(s + 13)	Answer saved	
3	**6/02/22, 14:58**	**Attempt finished**	**Correct**	**2**

Question 7

Correct

Mark 1 out of 1

Use Simpson's 1/3 rule on interval [1.0, 1.4] with h = 0.1 to approximate $\int_{1.0}^{1.4} f(x)\,dx$

i	0	1	2	3	4	5	6	7
x_i	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7
f_i	1.543	1.669	1.811	1.971	2.151	2.352	2.577	2.828

a. 0.5648

b. 0.9877

c. 0.729200 ✔

d. 0.8794

Your answer is correct.

The correct answer is: 0.729200

Response history

Step	Time	Action	State	Marks
1	6/02/22, 14:01	Started	Not yet answered	
2	6/02/22, 14:03	Saved: 0.729200	Answer saved	
3	6/02/22, 14:58	Attempt finished	Correct	1

Question 8

Correct

Mark 4 out of 4

Given the following set of discrete data in Table below

x	0.2	0.3	0.4	0.5	0.6	0.7
$f(x)$	1.0832	1.1972	1.3771	1.6487	2.0544	2.6644

f '(0.4) using 3-point endpoint formula 2.1285 ✔

f '(0.4) using 5-point midpoint formula 2.2007 ✔

Your answer is correct.

The correct answer is:

Given the following set of discrete data in Table below

x	0.2	0.3	0.4	0.5	0.6	0.7
$f(x)$	1.0832	1.1972	1.3771	1.6487	2.0544	2.6644

f '(0.4) using 3-point endpoint formula [2.1285]

f '(0.4) using 5-point midpoint formula [2.2007]

Response history

Step	Time	Action	State	Marks
1	6/02/22, 14:01	Started	Not yet answered	
2	6/02/22, 14:03	Saved: {2.1285} {2.2007}	Answer saved	
3	**6/02/22, 14:58**	**Attempt finished**	**Correct**	**4**

Question 9

Correct

Mark 2 out of 2

if A,B,C square matrices $B = ACA^{-1}$ *then* $\det(B) =$

Select one:

- a. det(A)
- b. det(A) and det(C)
- c. neither det(A) nor det(C)
- d. det(C) ✔

Your answer is correct.

The correct answer is: det(C)

Response history

Step	Time	Action	State	Marks
1	6/02/22, 14:01	Started	Not yet answered	
2	6/02/22, 14:03	Saved: det(C)	Answer saved	
3	6/02/22, 14:58	Attempt finished	Correct	2

Question 10

Correct

Mark 1 out of 1

Determine the number of solutions of the linear system:

x − y = 12

x +y = 0

a. no solution

b. two solutions

c. one solution ✔

d. infinite solutions

Your answer is correct.

The correct answer is:
one solution

Response history

Step	Time	Action	State	Marks
1	6/02/22, 14:01	Started	Not yet answered	
2	6/02/22, 14:12	Saved: one solution	Answer saved	
3	6/02/22, 14:58	Attempt finished	Correct	1

Question 11

Correct

Mark 1 out of 1

The Det of a matrix M= $\begin{bmatrix} 0 & 4 & 0 \\ 2 & 50 & 2 \\ 1 & -2 & -8 \end{bmatrix}$

- a. 72 ✔
- b. -54
- c. -72
- d. 0
- e. None of them

Your answer is correct.

The correct answer is:
72

Response history

Step	Time	Action	State	Marks
1	6/02/22, 14:01	Started	Not yet answered	
2	6/02/22, 14:03	Saved: 72	Answer saved	
3	**6/02/22, 14:58**	**Attempt finished**	**Correct**	**1**

Question 12

Correct

Mark 1 out of 1

The following matrix represents .....

$$\begin{bmatrix} 1 & 7 & 4 & 4 \\ 0 & 1 & 7 & 4 \\ 0 & 0 & 7 & 8 \\ 0 & 0 & 0 & 3 \end{bmatrix}$$

Select one:

- a. Lower triangular matrix
- b. Diagonal matrix
- c. Identity matrix
- d. Upper triangular matrix ✔

Your answer is correct.

The correct answer is: Upper triangular matrix

Response history

Step	Time	Action	State	Marks
1	6/02/22, 14:01	Started	Not yet answered	
2	6/02/22, 14:03	Saved: Upper triangular matrix	Answer saved	
3	**6/02/22, 14:58**	**Attempt finished**	**Correct**	**1**

Question 13

Correct

Mark 1 out of 1

Round the number to the nearest thousand x= 99.9995

Select one:

- a. 100.000 ✔
- b. None of them
- c. 99.9996
- d. 99.999
- e. 10.000

Your answer is correct.

The correct answer is: 100.000

Response history

Step	Time	Action	State	Marks
1	6/02/22, 14:01	Started	Not yet answered	
2	6/02/22, 14:03	Saved: 100.000	Answer saved	
3	**6/02/22, 14:58**	**Attempt finished**	**Correct**	**1**

Question 14

Correct

Mark 1 out of 1

A developer claims that a program costs 98 US Dollar, and the True cost is 100 US Dollar. One of the following is True

Select one:

a. none of them

b. The claim cost was above 1%

c. The claim cost was above 2%

d. The claimed cost was too low by 2% ✔

e. The claimed cost was too low by 1%

Your answer is correct.

The correct answer is: The claimed cost was too low by 2%

Response history

Step	Time	Action	State	Marks
1	6/02/22, 14:01	Started	Not yet answered	
2	6/02/22, 14:03	Saved: The claimed cost was too low by 2%	Answer saved	
3	6/02/22, 14:58	Attempt finished	Correct	1

Question 15

Correct

Mark 1 out of 1

Given the following points

x	0	2	4
F(x)	-1	-7	13

$$in\ Newton\ Difference \cdots Table \cdots \Delta^2 f(x)\ is$$

Select one:

- a. 1.5 ✔
- b. 2/3
- c. -1.5
- d. -2/3
- e. None of them

Your answer is correct.

The correct answer is: 1.5

Response history

Step	Time	Action	State	Marks
1	6/02/22, 14:01	Started	Not yet answered	
2	6/02/22, 14:14	Saved: 1.5	Answer saved	
3	6/02/22, 14:58	Attempt finished	Correct	1

Question 16

Correct

Mark 1 out of 1

The third Taylor Polynomial for f(x)=sin(x) at x=0 is

a. None of them

b. 1-x^3/3!

c. x-x^3/3! ✔

d. 1+x^3/3!

e. x+x^3/3!

Your answer is correct.

The correct answer is:
x-x^3/3!

Response history

Step	Time	Action	State	Marks
1	6/02/22, 14:01	Started	Not yet answered	
2	6/02/22, 14:04	Saved: x-x^3/3!	Answer saved	
3	**6/02/22, 14:58**	**Attempt finished**	**Correct**	**1**

Question 17

Correct

Mark 1 out of 1

Let f(x)=xe^x find f'(2) using three point difference formula and h=0.1 (approximate to 2 digits

Answer: 22.23 ✔

The correct answer is: 22.23

Response history

Step	Time	Action	State	Marks
1	6/02/22, 14:01	Started	Not yet answered	
2	6/02/22, 14:19	Saved: 22.23	Answer saved	
3	6/02/22, 14:58	Attempt finished	Correct	1

Question 18

Correct

Mark 2 out of 2

Create a linear system to model this situation:

A rectangular field is 35 m longer than it is wide. The length of the fence سور around the perimeter of the field is 290 m.

a. $l = w + 35$
$l + w = 290$

b. $l = w + 35$
$2l + 2w = 290$ ✔

c. $l = w + 35$
$lw = 290$

d. $l + 35 = w$
$2l + 2w = 290$

e. None of them

Your answer is correct.

The correct answer is:
$l = w + 35$
$2l + 2w = 290$

Response history

Step	Time	Action	State	Marks
1	6/02/22, 14:01	Started	Not yet answered	
2	6/02/22, 14:04	Saved: l = w + 35 2l + 2w = 290	Answer saved	
3	6/02/22, 14:58	Attempt finished	Correct	2

Question 19

Correct

Mark 2 out of 2

The polynomial that passes through the following x-y data

x	18	22	24
y	?	25	123

is given by

$$8.125x^2 - 324.75x + 3237{,}18 \le x \le 24.$$

The corresponding polynomial using Newton's divided difference polynomial is given by

$$f_2(x) = b_0 + b_1(x-18) + b_2(x-18)(x-22)$$

The value of b_2 is

a. None of Them

b. None of them

c. 6.2

d. 8.125 ✔

e. 2.0

Your answer is correct.

The correct answer is:
8.125

Response history

Step	Time	Action	State	Marks
1	6/02/22, 14:01	Started	Not yet answered	
2	6/02/22, 14:04	Saved: 8.125	Answer saved	
3	**6/02/22, 14:58**	**Attempt finished**	**Correct**	**2**

Question 20

Correct

Mark 2 out of 2

Given f (x) = sin(x) . Approximate f '(0.8) using Three 3-point central difference formula with h = 0.1

a. none of them

b. 0.5489

c. 0.9877

d. 0.6988 ✔

e. 0.7898

Your answer is correct.

The correct answer is:
0.6988

Response history

Step	Time	Action	State	Marks
1	6/02/22, 14:01	Started	Not yet answered	
2	6/02/22, 14:14	Saved: 0.5489	Answer saved	
3	6/02/22, 14:19	Saved: 0.9877	Answer saved	
4	6/02/22, 14:26	Saved: 0.6988	Answer saved	
5	**6/02/22, 14:58**	**Attempt finished**	**Correct**	**2**

Question 21

Correct

Mark 1 out of 1

$$\int_0^2 e^x dx =$$

Approximate to 3 digits

Answer: 6.389 ✔

The correct answer is: 6.389

Response history

Step	Time	Action	State	Marks
1	6/02/22, 14:01	Started	Not yet answered	
2	6/02/22, 14:06	Saved: 6.389	Answer saved	
3	**6/02/22, 14:58**	**Attempt finished**	**Correct**	**1**

Question 22

Correct

Mark 1 out of 1

Let:

$$\boldsymbol{A} = \begin{bmatrix} 2 \\ -4 \\ 5 \end{bmatrix}, \boldsymbol{B} = [7 \quad 2 \quad -1 \quad 4 \quad 3]$$

Then:

$$\boldsymbol{B^T A^T} =$$

Select one:

a. $\begin{bmatrix} 14 & -28 & 35 \\ 4 & -8 & 10 \\ -2 & 4 & -5 \\ 8 & -16 & 20 \\ 6 & -12 & 15 \end{bmatrix}$ ✔

b. $\begin{bmatrix} 1 & 0 \\ 1 & 2 \\ 0 & 3 \end{bmatrix}$

c. $\begin{bmatrix} 1 & 5 & 6 \\ -4 & -2 & 3 \end{bmatrix}$

d. $\begin{bmatrix} 14 & 4 & -2 & 8 & 6 \\ -28 & -8 & 4 & -16 & -12 \\ 35 & 10 & -5 & 20 & 15 \end{bmatrix}$

Your answer is correct.

The correct answer is: $\begin{bmatrix} 14 & -28 & 35 \\ 4 & -8 & 10 \\ -2 & 4 & -5 \\ 8 & -16 & 20 \\ 6 & -12 & 15 \end{bmatrix}$

Response history

Step	Time	Action	State	Marks
1	6/02/22, 14:01	Started	Not yet answered	
2	6/02/22, 14:06	Saved:	Answer saved	
3	6/02/22, 14:58	Attempt finished	Correct	1

Question 23

Correct

Mark 1 out of 1

Solve the following integral using Simpson's Rule Approximate to 2 digits

$$\int_0^2 e^x dx =$$

Answer: 6.42 ✔

The correct answer is: 6.42

Response history

Step	Time	Action	State	Marks
1	6/02/22, 14:01	Started	Not yet answered	
2	6/02/22, 14:06	Saved: 6.42	Answer saved	
3	6/02/22, 14:58	Attempt finished	Correct	1

Question 24

Correct

Mark 1 out of 1

Given the following points

x	0	2	4
F(x)	-1	-7	13

in Newton Difference···Table···$\Delta^1 f(x)$ is

Select one:

a. 4,-4

b. -3,3 ✔

c. none of them

d. -4,4

e. 3,-3

Your answer is correct.

The correct answer is: -3,3

Response history

Step	Time	Action	State	Marks
1	6/02/22, 14:01	Started	Not yet answered	
2	6/02/22, 14:06	Saved: -3,3	Answer saved	
3	6/02/22, 14:58	Attempt finished	Correct	1

Question 25

Correct

Mark 1 out of 1

solve the following integral using Trapezoidal rule . Approximate to 2 digits

$$\int_0^2 e^x dx =$$

Answer: 4.19 ✔

The correct answer is: 4.19

Response history

Step	Time	Action	State	Marks
1	6/02/22, 14:01	Started	Not yet answered	
2	6/02/22, 14:06	Saved: 4.19	Answer saved	
3	**6/02/22, 14:58**	**Attempt finished**	**Correct**	**1**

Question 26

Correct

Mark 6 out of 6

Solve $2x^3-2.5x-5=0$ for the root in [1,2] by Newton Raphson method using $x_0=2$

The value for X_1 after the first iteration 1.7209302187 ✔

The value for X_2 after the second iteration 1.6625729799 ✔

The value for X_3 after the third iteration 1.6601046324 ✔

Your answer is correct.

The correct answer is:
Solve $2x^3-2.5x-5=0$ for the root in [1,2] by Newton Raphson method using $x_0=2$

The value for X_1 after the first iteration [1.7209302187]

The value for X_2 after the second iteration [1.6625729799]

The value for X_3 after the third iteration [1.6601046324]

Response history

Step	Time	Action	State	Marks
1	6/02/22, 14:01	Started	Not yet answered	
2	6/02/22, 14:17	Saved: {1.7209302187} {1.6625729799} {1.6601046324}	Answer saved	
3	6/02/22, 14:58	Attempt finished	Correct	6

Question 27

Correct

Mark 2 out of 2

The following x-y data is given beliow

x	15	18	22
y	24	37	25

The Newton's divided difference second order polynomial for the above data is given by

$$f_2(x)=b_0+b_1(x-15)+b_2(x-15)(x-22)$$

The value of b_1 is

a. -1.048

b. 4.333 ✔

c. None of them

d. 24.0

e. 0.1433

Your answer is correct.

The correct answer is:
4.333

Response history

Step	Time	Action	State	Marks
1	6/02/22, 14:01	Started	Not yet answered	
2	6/02/22, 14:08	Saved: 4.333	Answer saved	
3	6/02/22, 14:58	Attempt finished	Correct	2

Question 28

Correct

Mark 1 out of 1

let f(x)=ln(x) find f'(1.8) using forward difference formula h=0.1

f'(1.8) =

Approximate to 2 digits

Answer: 0.54 ✔

The correct answer is: 0.54

Response history

Step	Time	Action	State	Marks
1	6/02/22, 14:01	Started	Not yet answered	
2	6/02/22, 14:08	Saved: 0.58	Answer saved	
3	6/02/22, 14:17	Saved: 0.54	Answer saved	
4	**6/02/22, 14:58**	**Attempt finished**	**Correct**	**1**

Question 29

Correct

Mark 2 out of 2

The function $f(x)=e^x$ using Taylor 5th degree polynomial at x0=0

a. $f(x)=x+x^2+x^3+x^4+x^5$

b. $f(x)=1+\frac{x^2}{2}-\frac{x^3}{6}+\frac{x^4}{24}+\frac{x^5}{120}$

c. $f(x)=\frac{x^2}{2}-\frac{x^3}{6}+\frac{x^4}{24}+\frac{x^5}{120}$

d. $f(x)=1+x+\frac{x^2}{2}+\frac{x^3}{6}+\frac{x^4}{24}+\frac{x^5}{120}$ ✔

e. none

Your answer is correct.

The correct answer is:

$f(x)=1+x+\frac{x^2}{2}+\frac{x^3}{6}+\frac{x^4}{24}+\frac{x^5}{120}$

Response history

Step	Time	Action	State	Marks
1	6/02/22, 14:01	Started	Not yet answered	
2	6/02/22, 14:17	Saved:	Answer saved	
3	6/02/22, 14:58	Attempt finished	Correct	2

Question 30

Correct

Mark 1 out of 1

The necessary condition for the Taylor- Maclaurin expansion to be true for function f(x) is _____

- a. f(x) should be continuous and differentiable ✔
- b. f(x) should exists at every point
- c. None of them
- d. f(x) should be continuous
- e. f(x) should be differentiable

Your answer is correct.

The correct answer is:
f(x) should be continuous and differentiable

Response history

Step	Time	Action	State	Marks
1	6/02/22, 14:01	Started	Not yet answered	
2	6/02/22, 14:08	Saved: f(x) should be continuous and differentiable	Answer saved	
3	**6/02/22, 14:58**	**Attempt finished**	**Correct**	1

Question 31

Correct

Mark 1 out of 1

In Secant method we require an initial points. how many points should we start secant iteration?

- a. 2 points ✔
- b. one point
- c. 4 points
- d. 3 points

Your answer is correct.

The correct answer is:
2 points

Response history

Step	Time	Action	State	Marks
1	6/02/22, 14:01	Started	Not yet answered	
2	6/02/22, 14:09	Saved: 2 points	Answer saved	
3	6/02/22, 14:58	Attempt finished	Correct	1

Question 32

Correct

Mark 2 out of 2

•Solve the system of equations.

y=x^2+1

x-y=-1

a. (1,2) (1,0)

b. None of them

c. (1,2) (0,1) ✔

d. (2,1)(0,1)

e. (1,1) (0,1)

Your answer is correct.

The correct answer is:
(1,2) (0,1)

Response history

Step	Time	Action	State	Marks
1	6/02/22, 14:01	Started	Not yet answered	
2	6/02/22, 14:09	Saved: (1,2) (0,1)	Answer saved	
3	**6/02/22, 14:58**	**Attempt finished**	**Correct**	**2**

Question 33

Correct

Mark 2 out of 2

Approximate the integrals $\int_0^{\pi/4} \sin(x)\,dx$ using the simple trapezium rule

a. 0.8790

b. 0.5689

c. 0.4578

d. None of them

e. 0.2776 ✔

Your answer is correct.

The correct answer is:
0.2776

Response history

Step	Time	Action	State	Marks
1	6/02/22, 14:01	Started	Not yet answered	
2	6/02/22, 14:09	Saved: 0.2776	Answer saved	
3	**6/02/22, 14:58**	**Attempt finished**	**Correct**	**2**

Previous activity

◄ Mid-term Exam Thursday 30/12/2021

Jump to...

Next activity

Course Evaluation صندوق الاقتراحات لتحسين المقرر الدراسي (hidden) ►

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