MCQ1: The following x-y data is given The Newton’s divided difference second order polynomial for the above data is given by f2x=b0+b1x-</mo
Answer: -1.0480

MCQ2: The next iterative value of the root of x2-4=0 is ….... using the Newton-Raphson method with the initial guess is 3.
Answer: 1.5

MCQ3: Given the table below the divided differences interpolation polynomial P(x) is …..
Answer: x3-x+4

MCQ4: Given that m=12E12+E- 12 and d=E&
Answer: 1+∂22

MCQ5: The eigenvalues of the matrix 329751361719 are obtained by solving the cubic equation …..
Answer: λ3-27λ2+167λ-285

MCQ6: The polynomial that passes through the following x-y data Is given by 8.125x2-324.75x+3237, 18≤t≤24The corresponding polynomial using Newton’s divided difference polynomial is given by<msu
Answer: 0.2500

MCQ7: ……. is used to denote the process of finding the values inside the interval x0,xn
Answer: Interpolation

MCQ8: Lagrange’s interpolation formula is used when computing data of …….. intervals.
Answer: Equal

MCQ9: Find the Taylor polynomial of fx=lnx about x0=1.
Answer: x-1+x-122+x-133

MCQ10: Using Gauss-Seidel method, solve the system of equations8111-5111-4x1<m
Answer: -0.1255

MCQ11: If the determinant of a square matrix A is zero, then matrix A is called.....
Answer: Zero matrix

MCQ12: The Newton-Raphson method of finding roots of nonlinear equations falls under the category of …….. methods
Answer: Bracketing

MCQ13: Expression of ∇3f1 as a backward difference is ……
Answer: ∇3f4

MCQ14: If A=23-1102 and B=11224</mt
Answer: 9

MCQ15: …….. errors are caused by using approximate formula in computation.

Answer: Inherent

MCQ16: The Newton Raphson method is also called ……
Answer: Bolzano’s Bisection method

MCQ17: If fx=0 has a root between a and b then f(a) and f(b) are of ……. signs.
Answer: Opposite

MCQ18: If A is a singular matrix, then …….
Answer: 1 is an eigenvalue of the matrix A

MCQ19: The Lagrange polynomial that passes through the 3 data points is given byf2x=Lox24+L1x</mrow&g
Answer: -0.071430

MCQ20: The following data of the velocity of a body is given as a function of time.Using quadratic interpolation to the value of the velocity at t=14.9 seconds, the three data points of time needed for interpolation are
Answer: 0,15,18

MCQ21: Iteration method is a …… method
Answer: Direct

MCQ22: To estimate the value of 1.75 from the data given belowThe interval h=……
Answer: - 0.05

MCQ23: The following n data points x1,y1, x2,y2, . . . <math xmlns="http://ww
Answer: Equally spaced

MCQ24: A polynomial of the form y=ax2+bx+c is called ……
Answer: linear equation

MCQ25: The Newton-Raphson method formula for finding the square root of a real number R from the equation x2-R=0 is
Answer: xi+1=xi2

MCQ26: Solving the linear system of equation 2x1+3x2-x3=5, -2x2-x3</ms
Answer: 5

MCQ27: If f1=-3, f3=9,f4=30, f6=132 and the Lagrange’s interpolating polynomial is give
Answer: 16x3-11x2+34x-24

MCQ28: If one root of the equation x2+px+12=0 is 4 and the equation x2+px+q=0 have equal roots, then the value of q is ……
Answer: 494

MCQ29: The eigenvalues of the matrix B=100230456 are
Answer: 2, 5, 6

MCQ30: If the Newton’s interpolating polynomial P4x=x4-3x3+5x2-6. Find the approximate value of f(<mi&g
Answer: 381

MCQ31: The eigenvalues of 56170-19230037 are
Answer: -19, 5, 37

MCQ32: …… method is used for finding the dominant eigenvalue of a matrix.
Answer: Gauss elimination method

MCQ33: The data of the velocity of a body as a function of time is given as follows:The velocity in m/s at 16s using linear polynomial interpolation is approximately …..
Answer: 27.867

MCQ34: If f1=-3, f3=9,f4=30, f6=132 and the Lagrange’s interpolating polynomial is given
Answer: 16x3-11x2+34x-24

MCQ35: If m=12E12+E- 22, where m is the mean operator then m&l
Answer: E12+E-22

MCQ36: Every polynomial equation of the nth degree has ……. roots
Answer: N

MCQ37: If 1 is an eigenvalue of A, then ……
Answer: A is a singular matrix

MCQ38: The following data of the velocity of a body is given as a function of timeThe quadratic interpolation Vt=8.667t2-349.67t+3523, 18≤t≤24 approximates the velocity of the body. Find the time in seconds at which the velocity of the body is 35m/s.
Answer: 18.667

MCQ39: The modification of Gauss elimination method is ……
Answer: Gauss Jordan method

MCQ40: If f1=-3, f3=9,f4=30, f6=132 and the Lagrange's interpolating polynomial is given
Answer: 16x3-11x2+34x-24

MCQ41: Consider the function fx=(x-1)(x-2)(x-3) in 0,4. Find a point X0
Answer: 3±34

MCQ42: Expression of Δ3f1 as a backward difference is ……
Answer: ∇3f4

MCQ43: Let A=126541732, then detA&l
Answer: -13

MCQ44: One of the roots of the equation x3-3x2+x-3=0 is ……
Answer: -1

MCQ45: The eigenvalues of the matrix A=2213 are
Answer: 1, 4

MCQ46: If A=23-1102 and B=11224&lt
Answer: 9

MCQ47: The eigenvalues of a 4x4 matrix A are given as 2, -3, 13, and 7. The detA then is …….
Answer: 546

MCQ48: If a polynomial of degree n has more than n zeros, then the polynomial is _____
Answer: Oscillatory

MCQ49: The Newton-Raphson method of finding roots of nonlinear equations falls under the category of …….. methods
Answer: bracketing

MCQ50: Solving the linear system of equation 2x1+3x2-x3=5, -2x2-x3</ms
Answer: -1

Fill in the Blank (FBQs):
FBQ1: What is the coefficient of x-13 from the first three terms of the Taylor polynomial of fx=lnx about x0=1</math&gt
Answer: *1/3*

FBQ2: Iteration method is a self- …… method
Answer: *Correcting*

FBQ3: Solving the linear system of equation 2x1+3x2-x3=5, -2x2-x3</ms

Answer: *1*

FBQ4: If one root of the equation x2+px+12=0 is 4 and the equation x2+px+q=0 have equal roots, then the value of q is ……
Answer: *12*

FBQ5: The real root of the equation x3-3x2+x-3=0 is ……..
Answer: *3*

FBQ6: …… method is used for finding the dominant eigenvalue of a matrix.
Answer: *Power*

FBQ7: The following n data points x1,y1, x2,y2, . . . <math xmlns="http://ww
Answer: *quadratic spline*

FBQ8: If a polynomial of degree n has more than n zeros, then the polynomial is ……..
Answer: *zero everywhere*

FBQ9: The following x-y data is given The Newton’s divided difference second order polynomial for the above data is given by f2x=b0+b1x-</mo
Answer: 4.33

FBQ10: Velocity versus time data for a body is approximated by a second order Newton’s divided difference polynomial as Vt=b0+39.622t-20+0.5540(t-20)(t-15), 10</mn
Answer: *36.85*

FBQ11: The following data of the velocity of a body is given as a function of time.Using the quadratic interpolation to find the value of the velocity at t=14.9 seconds, the three data points of time needed for interpolation are ……
Answer: *0,15,18*

FBQ12: The Newton-Raphson method of finding roots of nonlinear equations falls under the category of …….. methods
Answer: *Open*

FBQ13: …… errors are due to computational procedure.
Answer: *Round off*

FBQ14: The next iterative value of the root of x2-4=0 using the Newton-Raphson method is .... to three decimal places if the initial guess is 3.
Answer: *2.167*

FBQ15: The root of the equation fx=0 is found by using the Newton-Raphson method. The initial estimate of the root is x0=3, f3=5. The angle the line tangent to the function f
Answer: *-0.247*

FBQ16: The highest eigenvalues of 56170-19230037 is …….
Answer: *37*

FBQ17: The Lagrange polynomial that passes through the 3 data points is given byf2x=Lox24+L1x</mrow&g
Answer: *0.50*

FBQ18: If -4.5-41 is an eigenvector of 8-424020-
Answer: *4*

FBQ19: The coefficient of λ2 in cubic equation of the eigenvalues of the matrix 329751361719 is ……..
Answer: *-27*

FBQ20: The eigenvalues of a 4x4 matrix A are given as 2, -3, 13, and 7. The detA then is ……
Answer: *546*

FBQ21: If one of the eigenvalues of Anx2 is zero, it implies the determinant of A is …….
Answer: *Zero*

FBQ22: If f1=-3, f3=9,f4=30, f6=132 and the Lagrange’s interpolating polynomial is given
Answer: *1/30*

FBQ23: The following data of the velocity of a body is given as a function of timeUsing quadratic interpolation, Vt=8.667t2-349.67t+3523, 18≤t≤24 approximates the velocity of the body. Find the time in seconds at which the velocity of the body is 35m/s to three decimal places.
Answer: *22.294*

FBQ24: If f1=-3, f3=9,f4=30, f6=132 and the Lagrange’s interpolating polynomial is given
Answer: *-4*

FBQ25: The following data of the velocity of a body is given as a function of time One of the interpolant approximations for the velocity from the above data is given asVt=8.6667t2-349.67t+3523,18≤t≤24 using the above interpolant, the distance in meters covered by the body between <math xmlns=
Answer: *10.337*

FBQ26: If f1=-3, f3=9,f4=30, f6=132 and the Lagrange’s interpolating polynomial is given as <math xmlns="
Answer: *-3*

FBQ27: If the Newton’s interpolating polynomial P4x=x4-3x3+5x2-6. The approximate value of f(x&
Answer: *6*

FBQ28: The polynomial that passes through the following x-y data Is given by 8.125x2-324.75x+3237,18≤t≤24The corresponding polynomial using Newton’s divided difference polynomial is given by<mi
Answer: *8.125*

FBQ29: If the Newton’s interpolating polynomial P4x=x4-3x3+5x2-6. The approximate value of f(x&
Answer: *369*

FBQ30: If f1=-3, f3=9,f4=30, f6=132 and the Lagrange’s interpolating polynomial is given
Answer: *1/30*

FBQ31: The ..... difference interpolation polynomial and the Lagrange’s interpolating polynomial of f(x) are the same.
Answer: *Divided*

FBQ32: Given the table below the divided differences interpolation polynomial P(x) is x3+cx-4. What is c?
Answer: *1*

FBQ33: ……errors are caused by using approximate formula in computation.
Answer: *Truncation*

FBQ34: Expression of Δ3f1 as a backward difference is ∇3fk. What is k?
Answer: *4*

FBQ35: Expression of ∂2f2 as a backward difference is Δ2fn. Find n.
Answer: *1*

FBQ36: Given that m=12E12+E- 12 and d=E</m
Answer: *Md*

FBQ65: In Newton’s forward interpolation formula the first two terms will give the …….. Interpolation.
Answer: *Linear*

FBQ38: In estimating the value of (1.45) from the data given belowthe interval h=……
Answer: 0.1

FBQ39: If A=23-1102 and B=11224</mt
Answer: *12*

FBQ40: Let A=126541732, then detA&l
Answer: *-71*

FBQ41: If the determinant of a square matrix A is zero, then matrix A is called .....
Answer: *Singular matrix*

FBQ42: Solving the linear system of equation 2x1+3x2-x3=5, -2x2-x3</ms
Answer: *-5*

FBQ43: Using the Gauss-seidel method for solving the system of equations8111-5111-4x1</mtr&
Answer: *-3.225*

FBQ44: Using Gauss-Seidel method for solving the system of equations8111-5111-4x1
Answer: *-2.875*

FBQ45: If A is a……., then detA=detA=0
Answer: *singular matrix*

FBQ46: If 1 is an eigenvalue of A, then the eigenvalue AT is …….
Answer: *1*

FBQ47: The eigenvalues of the matrix A=2213 are ……
Answer: *1, 4*

FBQ48: The eigenvalues of the matrix B=100230456 are ……
Answer: *1, 3, 6*

FBQ49: The data of the velocity of a body as a function of time is given as follows:The velocity in m/s at 16s using linear polynomial interpolation to three decimal places is ……
Answer: *28.333*

FBQ50: The true value of π is 3.14159265 . . . In some mensuration problems the value 227 is commonly used as an approximation to π. The error in this approximation to 6 significant figures is ……
Answer: *– 0.00126449*