FBQ1: When the sequence of partial sums tends to an infinite limit, oscillates either finitely or infinitely the series is said to be \_\_\_\_

Answer: divergent

FBQ2: Both Taylor series and Maclaurin series only represent the function f(x) in their interval of \_\_\_\_\_\_

Answer: Convergence

FBQ3: When functions are expanded at x = a, we have Taylor’s expansion and when functions are expanded at x = 0 then we have \_\_\_\_\_ expansion

Answer: Maclaurin

FBQ4: By considering the hypothesis of mean value theorem, Given that f(x) = x2 + 2x +1 a = 1, b =2

Answer: 4

FBQ5: By considering the hypothesis of mean value theorem, Given that fx=x2+2x+1 and a=1, b = 2 find fb=\_\_\_\_\_

Answer: 9

FBQ6: By considering the hypothesis of mean value theorem, Given that fx=x2+2x+1 and a=1, b = 2 find fıc=\_\_\_\_\_

Answer: 5

FBQ7: \_\_\_\_\_ rule is a technique for approximating the definite integral

Answer: Trapezoidal

FBQ8: \_\_\_\_\_ rule is an arithmetical rule for estimating the area under a curve where the values of an odd number of ordinates including those at each end.

Answer: Simpson’s

FBQ9: The trapezoidal rule is also known as \_\_\_\_ rule

Answer: Trapezium

FBQ10: The ∂2f∂x∂y of the function fx,y=3x2-x3y3+5xy+6y3 evaluate at the points x=1 and y=2 is \_\_\_\_\_\_\_\_\_\_\_

Answer: -31

FBQ11: The ∂2f∂y2 of the function fx,y=3x2-x3y3+5xy+6y3 evaluate at the points x=1 and y=2 is \_\_\_\_\_\_\_\_\_\_\_

Answer: 60

FBQ12: The limx→2 ⁡x2-2xx2-4 is \_\_\_\_\_\_\_\_\_\_\_

Answer: ½

FBQ13: The limx→∞ ⁡xx3+5 is \_\_\_\_\_\_\_\_\_\_\_

Answer: 0

FBQ14: If fx=x(x2-x-2) satisfies Mean Value Theorem , the value c is \_\_\_\_\_\_\_\_\_\_\_

Answer: 1/3

FBQ15: The exponential form of the function fx=1+x+x22!+x33!+x44!+x55!+⋯ is \_\_\_\_\_\_\_

Answer: exp x

FBQ16: Find the limit of \[\lim\_{(x, y)\rightarrow (2, 1)} x+3y^{2}\] is \_\_\_\_\_\_\_\_

Answer: 5

FBQ17: Find the limit of \[\lim\_{(x, y)\rightarrow(2,4)} \frac{x+y}{x-y}\] is \_\_\_\_\_\_\_\_

Answer: -3

FBQ18: Find limit \[\lim\_{(x, y, z)\rightarrow (1, 2, 5)} \sqrt(x+y+z)\] is \_\_\_\_\_\_\_\_\_\_

Answer: 3

FBQ19: The coefficient of $$x^{2}$$ in the Taylor series about $$x=0$$ for $$f(x)=e^{-x^{2}}$$ is \_\_\_\_\_\_\_\_\_\_\_\_\_

Answer: -1

FBQ20: The coefficient of $$x^{3}$$ in the Taylor series about x=0 for f(x)=sin 2x is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Answer: -4/3

FBQ21: Let \[f(x)=\frac{\sin x}{1+x^{2}}\] and $$y^{n}$$ denote the $$n^{th}$$ derivative of f(x) at x=0 then the value of $$y^{100}+900y^{98}$$ is \_\_\_\_\_\_\_\_\_

Answer: 0

FBQ22: If the first derivative at x=0 of the function $$f(x)=\frac{\cos (x)}{x^{2}-x+1}$$ is \_\_\_\_\_\_

Answer: 2

FBQ23: Given $$f(x,y)= 2x^{2}y$$, the value $$\frac{\partial f(x,y)}{\partial x}$$ at x=2 and y=4 is \_\_\_\_\_\_\_\_

Answer: 24

FBQ23: .Given that the function $$f(x)=\frac{2(x+3)}{x^{2}+x-2}$$ has an absolute maximum on the -2&lt;x&lt;q. The maximum value is \_\_\_\_\_\_\_\_

Answer: 2

FBQ25: The points of inflection of the function $$ f(x)=x^{4}-12x^{3}+6x-9$$ on the interval $$-2\leq x\leq 10$$ are \_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_

Answer: 0, 6

FBQ26: The value of a such that the function $$f(x)=x^{2}+ax+5, when f(2)= 15 is \_\_\_\_\_\_\_

Answer: 3

FBQ27: If x2+y2-2x-6y+5=0, the value d2ydx2 at x=3, y=2 is \_\_\_\_\_

Answer: 5

FBQ28: If the Mean Value Theorem satisfies fx=x2 on the interval -2, 1 , then the value of c is \_\_\_\_\_

Answer: -1/5

FBQ29: The minimum value of $$f(x,y)=x^{2}+y^{2}+6x+12$$ is \_\_\_\_\_\_\_\_\_

Answer: 3

FBQ30: Suppose w=x3yz+xy+z+3 and x=3cos⁡t,  y=3sin⁡t and w=2t. The value dwdtt=π2 is \_\_\_\_\_\_\_\_\_\_\_\_\_

Answer: 7

FBQ31: Let $$f(x)=\frac{e^{x} sin(x^{2})}{x}$$, then the value of the fifth derivative at x=0 is \_\_\_\_\_\_\_\_\_\_\_

Answer: 21

FBQ32: Leibniz rule gives the Nth derivative of multiplication of \_\_\_\_\_ functions

Answer: Two

FBQ33: Leibniz theorem is applicable if n is a \_\_\_\_\_\_\_\_ integer

Answer: Positive

FBQ34: If nth derivative of $$xy\_{3}+x^{2}y\_{2}+x^{3}y\_{0}=0$$ then order of its nth differential equation is \_\_\_\_\_\_\_\_\_

Answer: n+3

FBQ35: For the function $$f(x)=\frac{sin x}{x^{2}}$$. \_\_\_\_\_\_\_\_ are the number of points exist in the interval $$[0, 7\pi]$$ such that $$f’(c)= 0$$

Answer: True

FBQ36: $$f(x)=\frac{sin x}{x}$$. \_\_\_\_\_\_\_\_ are the number of points exist in the interval $$[0, 18\pi]$$ such that $$f’(c)= 0$$

Answer: 18

FBQ37: For all second degree polynomials with y = ax2 + bx + k, it is seen that the Rolles’ point is at c = 0. Also the value of k is zero. Then the value of b is \_\_\_\_\_

Answer: 0

FBQ38: For second degree polynomial it is seen that the roots are equal. Then \_\_\_\_\_\_ is the relation between the Rolles point c and the root x

Answer: c=x

FBQ39: Rolle’s Theorem is a special case of \_\_\_\_\_\_\_\_\_\_\_ theorem

Answer: Mean value

FBQ40: The value of $$c$$ if $$f(x)=x(x-3)e^{3x}$$, is continuous over interval [0, 3] and differentiable over interval (0, 3)\_\_\_\_\_\_\_\_\_ (Answer to 3 decimal)

Answer: 2.703

FBQ41: The value of ‘a’ are \_\_\_\_\_ and \_\_\_\_\_\_,if f(x) = ax2+32x+4 is continuous over [-4, 0] and differentiable over (-4, 0) and satisfy the Rolle’s theorem. Hence find the point in interval (-2,0) at which its slope of a tangent is zero

Answer: 8, -2

FBQ42: For the function f(x) = x2 – 2x + 1. We have Rolles point at x = 1. The coordinate axes are then rotated by 45 degrees in anticlockwise sense. What is the position of new Rolles point with respect to the transformed coordinate axes\_\_\_\_\_\_\_\_\_\_\_

Answer: 3/2

FBQ43: If f(a)=f(b) in mean value theorem, then it becomes \_\_\_\_\_\_\_\_ theorem

Answer: Rolle’s

FBQ44: Mean Value theorem is applicable to the functions continuous in closed interval [a, b] and \_\_\_\_\_\_\_\_\_\_\_ in open interval (a, b)

Answer: Differentiable

FBQ45: Mean Value theorem is also known as \_\_\_\_\_\_\_\_\_\_\_ theorem

Answer: Lagrange’s

FBQ46: The point c is \_\_\_\_\_\_\_\_\_ in the curve f(x) = x3 + x2 + x + 1 in the interval [0, 1] where slope of a tangent to a curve is equals to the slope of a line joining (0,1)

Answer: 0.54

FBQ47: \_\_\_\_\_\_\_\_\_ is the point c between [2,9] where, the slope of tangent to the function f(x)=1+∛x-1 at point c is equals to the slope of a line joining point (2,f(2)) and (9,f(9)).(Providing given function is continuous and differentiable in given interval).

Answer: 4.56

FBQ48: \_\_\_\_\_\_\_ is the point c between [-1,6] where, the slope of tangent to the function f(x) = x2+3x+2 at point c is equals to the slope of a line joining point (-1,f(-1)) and (6,f(6)).(Providing given function is continuous and differentiable in given interval).

Answer: 2.5

FBQ49: The necessary condition for the maclaurin expansion to be true for function f(x) is f(x) should be continuous and \_\_\_\_\_\_

Answer: Differentiable

FBQ50: The limit $$\lim\_{(x, y)/rightarrow (0, 0)} \frac{x^{3}-y^{3}}{x-y}$$ is \_\_\_\_\_\_\_

Answer: 0

MCQ1: A single valued function of x is said to be continuous at x=a if

Answer: lim&nbsp;fx=&nbsp;f(a)

MCQ2: Which of the following is discontinuous at x = 0

Answer: Sin&nbsp;xx

MCQ3: A function y = f(x ) is said to be differentiable at a point x = a if

Answer: f1(x) exists that point

MCQ4: Find the derivative of y = Sin-1x

Answer: 11- x2

MCQ5: Suppose u = f(x, y) = x2 + y2, where x = cosh4t and y = 2t + t2. Find the total derivative of u with respect to t

Answer: 4sinh8t + 8t + 12t2 + 4t3

MCQ6: If f(u) = Sin u and u = x2+y2  find fx

Answer:  Cos U1+x2

MCQ7: If f(u) = Sinu and u = x2+y2  find fy

Answer: y Cos Ux2+y2

MCQ8: Partial derivatives are said to be continuous if

Answer:

MCQ9: Obtain the slope of the tangent at the point (2,3) of the curve 6 x2 + 3xy + x4 + 3y2 = 0

Answer: -65 24

MCQ10: A function f (x, y) of two variables is said to have a local maximum at (a,b) if there exists a rectangular region containing (a,b) such that \_\_\_\_

Answer: f(x, y)≤ f(a, b)

MCQ11: The local maxima and minima are called the \_\_\_\_ of (x, y)

Answer: extreme

MCQ12: To test for critical point if fxxfyy - fxy2&lt; 0 then this gives

Answer: saddle point

MCQ13: Obtain the stationary points of f(x, y) = x2+y2 subject to the constraint condition 3x+2y = 6

Answer: 18 13 ,12 13

MCQ14: A function f(x, y) is said to be homogeneous of degree m if

Answer: f(kx, ky) = km f(x, y)

MCQ15: What is the degree of the function f(x, y) = x3+4xy2- 3y3

Answer: three

MCQ16: If x and y are rectangular Cartesian coordinates, u = f(x, y) satisfies laplace’s equation if

Answer: ∂2f∂x2  + ∂2f∂y2  = 0

MCQ17: A function f(x, y) is said to have a maximum value of point (x, y) = (a, b) if

Answer: f(a+h, b+k)-f(a, b)&lt;0

MCQ18: A function f(x, y) is said to have a minimum value of point (x, y) if

Answer: f(a+h, b+k)- f(a, b)&gt;0

MCQ19: If exy+x+y=1, evaluate dy dx  at (0,0)

Answer: -1

MCQ20:  If xy + Sin y = 2 find dy dx

Answer: -y x+Cos y

MCQ21:  If z= Sin (x+y), x = u2+ v2,  y=2uv. Evaluate dzdu

Answer: 2(u+v) Cos(x + u)

MCQ22:  With the usual notation a series cannot be convergent unless

Answer: limn→∞⁡Un=0

MCQ23:  Let U1+ U2+ .  .  . Un+ .  .  .   be a series of positive terms. If limn→∞⁡Un+1Un&gt;1. Then the series

Answer: Diverges

MCQ24: As n→∞ of the series 1+12+13+14+ .  .  .  is

Answer: divergent

MCQ25:  For the series 12+23+34+45+ .   .   . an expression of Un+1 is given by

Answer: n+1n+2

MCQ26:  By considering the D’ Alembert test for positive terms if limn→∞⁡Un+1Un=1, then the series is

Answer: inconclusive

MCQ27: By the comparison test, the series 11P+12P+13P+14P + .  .  . +1nP   \_\_\_ if p &gt; 1

Answer: converges

MCQ28: Find limn→∞⁡Sin2xx2

Answer: 1

MCQ29: Evaluate limx→0⁡Sinhx-Sinxx3

Answer: 1/3

MCQ30: The Taylor’s series is given by

Answer: fx+h= fx+hfıx+h2fıı(x)2!+ .  .  .

MCQ31: Find limx→0⁡tan⁡x-xx3

Answer: 1/3

MCQ32: Determine limx→1⁡ x3-2x2+4x-34x2-5x+1

Answer: 1

MCQ33: Find the second order derivatives of the function. fx=x2-cosx at x=π4

Answer: 2+12

MCQ34: Find the third order derivatives of the function. fx=x2-cosx at x=π4

Answer: -12

MCQ35: limx→0⁡tan⁡x-xSin x-x  is

Answer: -2

MCQ36: From the Taylor’s expansion of Cos π3+x in ascending powers of x up to the x3 term find fı π3

Answer: -32

MCQ37: From the Taylor’s expansion of Cos π3+x in ascending powers of x up to the x3 term find fıı x

Answer: -cosx

MCQ38: From the Taylor’s expansion of Cos π3+x in ascending powers of x up to the x3 term find fıv π3

Answer: ½

MCQ39: From the Taylor’s expansion of Cos π3+x in ascending powers of x up to the x3 term find fıv x

Answer: Cos⁡x

MCQ40: Suppose fx is a function continuous on a close interval a≤x≤b and differentiable on the open interval a&lt;x&lt;b and if fa= fb= 0, then fıc

Answer: 0

MCQ41: From the Maclaurin expansion fx=In(1+x) find fıııx

Answer: 21+x3

MCQ42: From the Maclaurin expansion fx=In(1+x) find fıvx

Answer: -6(1+x)4

MCQ43: From the Maclaurin expansion fx=In(1+x) find fıı0

Answer: -1

MCQ44: From the Maclaurin expansion fx=In(1+x) find fv0

Answer: 4!

MCQ45: Using Simpson’s rule with 6 equally spaced intervals and by considering the integral ∫064+x3dx. Find The number of ordinates

Answer: 7

MCQ46: Using Simpson’s rule with 6 equally spaced intervals and by considering the integral ∫064+x3dx. Find ∆x = strip width

Answer: 1

MCQ47: Using Simpson’s rule with 6 equally spaced intervals and by considering the integral ∫064+x3dx. Find Area

Answer: 22.6square units

MCQ48: The two segment trapezoidal rule of integration is exact for integrating at most \_\_\_\_ order of polynomial

Answer: first

MCQ49: Using trapezoidal rule with five (5) equally spaced intervals and by considering the integral. ∫12  1x dx. Evaluate b-an

Answer: 1/5

MCQ50: Using trapezoidal rule with five (5) equally spaced intervals and by considering the integral. ∫12  1x dx, evaluatethe area of the integral

Answer: 17532520