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 Taylorâ€™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 fÄ±c=_____
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: Simpsonâ€™s

FBQ9: The trapezoidal rule is also known as ____ rule
Answer: Trapezium

FBQ10: The âˆ‚2fâˆ‚xâˆ‚y of the function fx,y=3x2-x3y3+5xy+6y3 evaluate at the points x=1 and y=2 is ___________
Answer: -31

FBQ11: The âˆ‚2fâˆ‚y2 of the function fx,y=3x2-x3y3+5xy+6y3 evaluate at the points x=1 and y=2 is ___________
Answer: 60

FBQ12: The limxâ†’2Â â□¡x2-2xx2-4 is ___________
Answer: Â½

FBQ13: The limxâ†’âˆžÂ â□¡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!+â‹¯ 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<x<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,Â y=2 is _____
Answer: 5

FBQ28: If the Mean Value Theorem satisfies fx=x2 on the interval -2,Â 1Â , 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=3cosâ□¡t,Â Â y=3sinâ□¡t and w=2t. The value dwdtt=Ï€2 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 $$fâ€™(c)= 0$$
Answer: True

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

FBQ37: For all second degree polynomials with y = ax2 + bx + k, it is seen that the Rollesâ€™ 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: Rolleâ€™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 â€˜aâ€™ are _____ and ______,if f(x) = ax2+32x+4 is continuous over [-4, 0] and differentiable over (-4, 0) and satisfy the Rolleâ€™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 â€“ 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: Rolleâ€™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: Lagrangeâ€™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+âˆ›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 fx= f(a)

MCQ2: Which of the following is discontinuous at x = 0
Answer: Sin 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-Â x2

MCQ5: Suppose u = f(x,Â 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+y2Â find fx
Answer: Â CosÂ U1+x2Â

MCQ7: If f(u) = Sinu and u = x2+y2Â find fy
Answer: yÂ CosÂ Ux2+y2Â

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 6Â x2 + 3xyÂ + x4 + 3y2 = 0
Answer: -65Â 24

MCQ10: A function f (x,Â 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,Â y)â‰¤ f(a,Â b)

MCQ11: The local maxima and minima are called the ____ of (x,Â y)
Answer: extreme

MCQ12: To test for critical point if fxxfyy - fxy2< 0 then this givesÂ
Answer: saddle point

MCQ13: Obtain the stationary points of f(x,Â y) = x2+y2 subject to the constraint condition 3x+2y = 6
Answer: 18Â 13Â ,12Â 13

MCQ14: A function f(x,Â y) is said to be homogeneous of degree m if
Answer: f(kx,Â ky) = km f(x,Â y)

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

MCQ16: If x and y are rectangular Cartesian coordinates, u = f(x,Â y) satisfies laplaceâ€™s equation if
Answer: âˆ‚2fâˆ‚x2Â + âˆ‚2fâˆ‚y2Â = 0

MCQ17: A function f(x,Â y) is said to have a maximum value of point (x,Â y) = (a,Â b) if
Answer: f(a+h,Â b+k)-f(a,Â b)<0

MCQ18: A function f(x,Â y) is said to have a minimum value of point (x,Â y) if
Answer: f(a+h,Â b+k)-Â f(a,Â b)>0

MCQ19: If exy+x+y=1, evaluate dyÂ dxÂ   at (0,0)
Answer: -1

MCQ20: Â If xy + Sin y = 2 find dyÂ dxÂ
Answer: -yÂ x+CosÂ y

MCQ21: Â If z=Â SinÂ (x+y), x = u2+Â v2,Â Â y=2uv. Evaluate dzdu
Answer: 2(u+v) Cos(x + u)

MCQ22: Â With the usual notation a series cannot be convergent unless
Answer: limnâ†'âˆžâ□¡Un=0

MCQ23: Â Let U1+Â U2+Â .Â Â .Â Â .Â Un+Â .Â Â .Â Â .Â Â be a series of positive terms. If limnâ†'âˆžâ□¡Un+1Un>1. Then the series
Answer: Diverges

MCQ24: As nâ†'âˆž of the series 1+12+13+14+Â .Â Â .Â Â .Â   is
Answer: divergent

MCQ25: Â For the series 12+23+34+45+Â .Â Â Â .Â Â Â . an expression of Un+1 is given by
Answer: n+1n+2

MCQ26: Â By considering the Dâ€™ Alembert test for positive terms if limnâ†'âˆžâ□¡Un+1Un=1, then the series is
Answer: inconclusive

MCQ27: By the comparison test, the series 11P+12P+13P+14PÂ +Â .Â Â .Â Â .
Â +1nPÂ Â   ___ if p > 1
Answer: converges

MCQ28: Find limnâ†'âˆžâ□¡Sin2xx2
Answer: 1

MCQ29: Evaluate limxâ†'0â□¡Sinhx-Sinxx3
Answer: 1/3

MCQ30: The Taylorâ€™s series is given by
Answer: fx+h=Â fx+hfÄ±x+h2fÄ±Ä±(x)2!+Â .Â Â .Â Â .

MCQ31: Find limxâ†'0â□¡tanâ□¡x-xx3Â
Answer: 1/3

MCQ32: Determine limxâ†'1â□¡Â x3-2x2+4x-34x2-5x+1
Answer: 1

MCQ33: Find the second order derivatives of the function. fx=x2-cosx at x=Ï€4
Answer: 2+12

MCQ34: Find the third order derivatives of the function. fx=x2-cosx at x=Ï€4Â
Answer: -12

MCQ35: limxâ†’0â□¡tanâ□¡x-xSinÂ x-xÂ is
Answer: -2

MCQ36: From the Taylorâ€™s expansion of Cos Ï€3+x in ascending powers of x up to the x3 term find   fÄ±Â Ï€3
Answer: -32

MCQ37: From the Taylorâ€™s expansion of Cos Ï€3+x in ascending powers of x up to the x3 term find fÄ±Ä±Â x
Answer: -cosxÂ

MCQ38: From the Taylorâ€™s expansion of Cos Ï€3+x in ascending powers of x up to the x3 term find fÄ±vÂ Ï€3
Answer: Â½

MCQ39: From the Taylorâ€™s expansion of Cos Ï€3+x in ascending powers of x up to the x3 term find fÄ±vÂ x
Answer: Cosâ□¡x

MCQ40: Suppose fx is a function continuous on a close interval aâ‰¤xâ‰¤b and differentiable on the open interval a<x<b and if fa=Â fb=Â 0, then fÄ±c
Answer: 0

MCQ41: From the Maclaurin expansion fx=In(1+x) find fÄ±Ä±Ä±x
Answer: 21+x3

MCQ42: From the Maclaurin expansion fx=In(1+x) find fÄ±vx
Answer: -6(1+x)4

MCQ43: From the Maclaurin expansion fx=In(1+x) find fÄ±Ä±0
Answer: -1

MCQ44: From the Maclaurin expansion fx=In(1+x) find fv0
Answer: 4!

MCQ45: Using Simpsonâ€™s rule with 6 equally spaced intervals and by considering the integral âˆ«064+x3dx. Find The number of ordinates
Answer: 7

MCQ46: Using Simpsonâ€™s rule with 6 equally spaced intervals and by considering the integral âˆ«064+x3dx. Find âˆ†x = strip width
Answer: 1

MCQ47: Using Simpsonâ€™s rule with 6 equally spaced intervals and by considering the integral âˆ«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. âˆ«12Â Â 1xÂ dx. Evaluate b-an
Answer: 1/5

MCQ50: Using trapezoidal rule with five (5) equally spaced intervals and by considering the integral. âˆ«12Â Â 1xÂ dx, evaluatethe area of the integral
Answer: 17532520