1. Which of the following is the sum of 5^ (k*1) where K goes from 1 to 3?

a) 675
b) 525
c) 875
d) 775

2. Sum the first three terms of the series, whose general term is 5ki

Where first term=k1=10

Second term=K2=14

Third term=k3= -2

a) 001
b) 101
c) 111
d) 110

3. If f(x) = Cos(x) + Sin(x) +x, then which of the following is NOT true about it.

a) Its anti – derivative is

Sin (x) – Cos (x) + x ^ 2/2+4

b) Its anti – derivative is

-Sin (x) – Cos (x) + x ^ 2/2+4

c) None of these

d) Its anti – derivative is
Sin (x) – Cos (x) + x ^ 2/2+5

4. Subdivide the interval [3, 5] into ‘n’ equal parts, and then the width of each subinterval is….

a) 1/n
b) n
c) -2/n
d) 2/n

5. Subdivide the interval [1, 5] into ‘n’ equally spaced subintervals then the width of each subinterval is….

a) 5
b) 5/n
c) 1/n
d) 4/n

6. ‘Xln(x/e)’ is the anti-derivative of ‘lnx’if and only if the derivative of ‘Xln(x/e)’ is equal to …….

a) Xln(x/e)
b) X
c) Inx
d) In(x/e)

7. If f(x) = Sec ^ (2) x+x^3, then which of the following is NOT true about it.

a) None of these
b) Its anti – derivative is

   Tan(x) +x^4/4 +15

c) Its anti – derivative is

   Tan(x) +x^4/4 +12

d) Its anti – derivative is

   Tan(x) +x^4/4 +10

8. Integral of 3 sec(x) tan(x) is

NOTE: x^n means ‘x’ to the power ‘n’

a) (3/2)sec^2(x)+C
b) 3sec(x)+C
c) None of these
d) 3tan(x)+C

9. The indefinite integral of ‘sec(x) tan(x)’ is…….

a) Cotx+c
b) Sinx+c
c) Secx+c
d) Tanx+c

10. If f(x) =x ^ 5+6, then which of the following is NOT true about it.

a) Its anti – derivative is

   x^6/6 + 12x

b) Its anti – derivative is

   X^6/6 +6x+6

c) Its anti – derivative is

   X^6/6 +6x+10

d) Its anti – derivative is
   X^6/6 +6x

11. Why the equation: x^2 + 8=0 does not have approximate solution while using Newton’s method?

a) X^2 will always be negative
b) X^2 will always be non-negative

12. What are the critical points of the function f(x) =x-1?

a) No critical point
b) None of these
c) X=1
d) X=0

13. Let A be the area of a rectangular under a continuous function f(x) over a closed interval [a, b], if this area is divided in to 'n'

a) (a-b)/2
b) (a-b)/n
c) (b-a)/2n
d) (b-a)/n

14. Increase in number of rectangular under any continuous function gives ------- approximation to area.

a) Better
b) Poor
c) No change in
d) None of these

15. If Newton's method succeeded to get the approximate solution of an equation, then which of the following is NOT true about it.

a) The slope of the tangent line (at any approximated point) must be zero
b) None of these
c) The tangent line (at any approximated point) is not parallel to x-axis
d) The sequence of approximated points not convergent to the exact solution

16. Summation of 2 where sum ranges from 0 to 10 equals 20.

a) False
b) True

17. If the closed intervals [-10,x] is divided into ‘20’ equally spaced subintervals each of which having the width equal to ‘1’ unit then the value of ‘x’ is ------

a) 0
b) 10
c) 30
d) 20

18. If f(x) = x^4, then which of the following is NOT true about it.

a) Its anti – derivative is

   X^5/5.

b) Its anti – derivative is

   X^5/5 + 10.

c) Its anti – derivative is

   X^ 5+ 5.

d) Its anti – derivative is

   X^5/5 +2

19. Let y= f(x) be a discontinuous function on a finite closed interval, then which of the following is true about it.

a) It has only absolute minimum value.
b) None of these
c) It may or may not have absolute extreme values.
d) It must have absolute extreme values.

20. Integral of 5^2 is

NOTE: x^n means ‘x’ to the power ‘n’

a) 25x
b) (1/3)5^3
c) None of these
d) 10

21. If f(x) = x^3 is defined on the interval [1, 3], then which of the following is true about it.

a) Its relative minimum value exits at the critical points.
b) Its relative minimum value does not exits at the critical points.
c) None of these
d) Its absolute minimum value exits at the critical points.

22. In approximation to an area Rn (where n is subscript) when limit is taken as n goes to infinity, approximation becomes actual area.

a) False
b) Ture

23. Integration of 5 with respect to x is ……..

a) 5
b) X
c) 5x^2
d) 5x

24. Sum of n- term of a series whose nth term is ‘n’ = 1/n+1, then what is the sum of the first two terms is --------.

a) 5/6
b) 6/5

c) 6/4
d) 6

25. Newton's method uses the ------ to approximate the root.

a) None of these
b) Tangent line
c) Secant line
d) Normal line

26. The polynomial function f(x) = 6x^2-30x + 36 has the critical point over the real line is……

a) 5
b) 2
c) 2/5
d) 5/2

27. If x = 1+2+3+4+ …. + 20, then
X= ……..

a) None of these
b) 200
c) 500
d) 210

28. In sigma notation 12+14+16+18+20 can be written as ……

a) Summation of (k) where (k values from 6 to 10)
b) Summation of (2k) where (k values from 1 to 5)
c) Summation of (k^2) where (k values from 6 to 10)
d) Summation of (2k) where (k values from 6 to 10)

29. X=1 is a critical value of the function.

If(x) = (x-1) ^ 3

NOTE: x^n means ‘x’ to the power ‘n’

a) False
b) True

30. If f(x) = 2 x + 7 is defined on the interval

[2, 4], then which of the following is true about it.

a) It has only absolute minimum value.
b) None of these
c) It has both absolute maximum and minimum values.
d) It has only absolute maximum values.

31. The indefinite integral of 5sinx is …..

a) 5cosx+c
b) -5cosx+c
c) cosx/5+c
d) -cosx/5+c

32. Summation of (ai) (i values from 1 to n) , summation of (aj) (j values from 1 to n), summation of (ak) (k values from 1 to n)

All these three represents same summation.

a) True
b) False

33. Which of the following will be left end points if the interval [-2, 2] is divided into 4 equal subintervals.

a) -2, -1, 1,2
b) -2,-1,0,1
c) None of these
d) -1,0,1,2

34. If x = (1^2) + (2^2) + (3^2) + (4^2) + …… + (30^2), then x = …….

a) 900
b) None of these
c) 9455
d) 465

35. If f(x) = Tan (x) then mean value theorem can be applied to it on the interval (0,2π)

a) True
b) False

36. If 'n' hoes from 1 to 4 and the summation of 'na' = Maxima of (e^x) in the interval [-e, 0], then the value of 'a' is …….

a) -1/10
b) 1/10
c) 10
d) -10

37. Subdivide the interval [a, b] into 4 equal subintervals then the width of each subinterval is ……

a) (b-a)/2
b) (b-2a)/4
c) (b-a)/4
d) (2b-a)/4

38. If f(x) =x ^ 5+x, then which of the following is true about it.

a) Its anti – derivative is
   None of these
b) Its anti – derivative is
   X^6/6 +x^2/2+6
c) Its anti – derivative is
   X^5/5+1.
d) Its anti – derivative is
   5x^4 + 1.

39. Newton's method fails to find the approximate solution of an equation if …….

a) The slope of the tangent line (at any approximated point) is non-zero
b) None of these
c) The tangent line (at any approximated point) is not parallel to x-axis
d) The tangent line (at any approximated point) is parallel to x-axis

40. If 'n' goes from 1 to 3 and the summation of 'na' = 6a, then the value of 'a' is …….

a) Undetermined
b) 1
c) -6
d) 6

41. 1+2+3 ……. +1000 equals ------
a) None of these
b) 3000
c) 1000
d) 500500

42. If f(x) = |x| -2 is defined on the interval
[-2, 2], then which of the following is true about it.

a) None of these

b) There is a point in the interval (-2, 2) where f(x) has a horizontal tangent
c) There is no such point in the interval (-2, 2) where f(x) has a horizontal tangent
d) It is discontinuous on the interval [-2, 2]

43. Which of the following is the absolute minima of the function: f(x) = -x in the interval [-1, 1]?

a) -1
b) 1
c) 0.5
d) 0

44. Maximum of the function f(x) = 2x+7 occurs at

a) None of these
b) X = -7/2
c) X = -2/7
d) X = 0

45. What are critical points of the function f(x) = x^2-1?

NOTE: x^n means 'x' to the power 'n'

a) No critical point
b) X=0
c) None of these
d) X=1

46. Integration of (Cosx/Sinx) Cosecx with respect to x ……

a) Cosecx
b) Secx
c) Cotx
d) –Cosecx

47. The estimated area under f(x) = x^2 + 2 from

X = 1 to x = 5 with right end points for

n = 2 is ……..

a) 50
b) 76
c) 30
d) 28

48. Area of a rectangle whose width is 5 units and length in 6 units will be:

a) None of these
b) 30 square units
c) 11 units
d) 22 units

49. The estimated area under f(x) = 12/x from

X = 1 to x = 3 with right end points for

n = 2 is ……..

a) 20
b) None of these
c) 10
d) 18

50. If x=-3 and x=3 are the two critical points of the function f(x) +81x 3(x^3) then by using the 2nd derivative least we can conclude that f(x) is relatively maximum if ……

a) X=-9
b) X=0
c) X=3
d) X=-3

51. Sum of cubes of n-terms of a series whose nth term is ‘n’=……..

a) Square of n(n+1)/2
b) Square of (n+1)/2
c) Square of n(n+1)/6
d) Square of n(n+1) (2n+1)/2

52. Let A be the area of a rectangle under a continuous function f(x) over a closed interval [a., b]. If this area is divided in to ‘n’ sub-rectangles then width of each approximated sub-intervals is …….

a) (b-a)/2n
b) (a-b)/n
c) (a-b)/2
d) (b-a)/n

53. If x = 5+ 6 + ……+ 40, then x = ……

a) 810
b) 820
c) None of these
d) 850

54. 1+2+3 …… +t equals

a) n(n+1)/2
b) none of these
c) n(n+1)(2n+1)/6
d) t(t+1)/2

55. If f(x) = x^2 is defined on the interval [-1, 3], then which of the following is true about it.

a) Its absolute maximum value is 9.
b) Its relative maximum value is 9.
c) None of these
d) Its absolute maximum value is 0.

56. Absolute minimum of the function f(x) = x in the semi open interval (0, 2) is …….

a) Undefined
b) 0
c) 2
d) 1

57. The critical value of the function y=100x – x^2 is

NOTE: x^n means 'x' to the power 'n'

a) None of these
b) X=25
c) X=0
d) X=50

58. Integration of "cosecx.cotx" with respect to x is …….

a) Tanx
b) Cotx
c) Cosecx
d) –Cosecx

59. If a function f(x) is defined on an interval [a, b] satisfying the conditions of the Rolle's Theorem, then which of the following is true about it.

e) It has only absolute minimum value.

f) None of these
g) It must have both absolute maximum and minimum values.
h) It has only absolute maximum values.

60. f(x) =x^3-3x, is increasing on the interval (0, infinity)

a) False
b) True

61. If f(x) = x^4 is defined on the interval
[-2, 2], then which of the following is true about it.

a) None of these
b) Its absolute maximum value exists at 2
c) Its relative maximum value exits 2
d) Its absolute minimum value exists at 2

62. Right end point, left end point, and midpoint evaluation all converges to same result as number of subintervals tends to +ve infinity.

a) True
b) False

63. Summation of (3), where (j varies from 1 to 4) indicates to add ------ to itself 4 times.

a) 3
b) 1
c) 4
d) 2

64. The anti-derivative of the function f(x) = 2-7Cosx, is ……

a) 2x-7Sinx+C

b) 2x-7Sinx+100
c) 2x-7Sinx-100
d) All choices are true

65. If x = (1^2)+(2^2)+(3^2)+4^2)+…..+(30^2), then x = ……

a) 900
b) None of these
c) 9455
d) 465

66. If 'n' goes from 1 to 4 and the summation of 'na' = Maxima of (e^x) in the interval [-e,0], then the value of 'a' is ……..

a) -1/10
b) 1/10
c) 10
d) -10

67. Critical point of function f(x) = 4x^2-4x+1 on closed interval [0,1] is x = --------

a) 0
b) ½
c) 2
d) 1.2

68. Which of the following in the sum of (2k+1) where k goes from 1 to 4?

a) 26
b) 22
c) 20
d) 24

69. The dimensions of a rectangle are given to be 8ft by 12ft. the perimeter of rectangle will be ……

a) 40 feet
b) 60 feet
c) 30 feet
d) 50 feet

70. Given a function f(x) = 1/(x-1) and the interval is (0.2), then mean value theorem cannot be applied due to …….

a) Discontinuity of the function in the given interval
b) Open interval
c) Rational function
d) None of these

71. If f(r) = 0 at some approximation "r" then we cannot proceed on newton's method.

a) True
b) False

72. For the function f(x) = |x|-1, if f(-1)=f(1)=0 then which of the following conclusion can be drawn about the point 'c' in the interval [-1,1] such that f '(c) =0?

a) Every point in [-1, 1] can be taken as 'c'
b) C=0
c) C=0.5
d) No such 'c' exists

73. Which using newton's method, which of the following will be the best initial approximate solution to solve the equation:
X = Sinx=0

a) X=pi

b) X=pi/2
c) X=pi/-2
d) X=0

74. In Rolle's Theorem, f(x) is continuous in closed interval [a, b] and differentiable in open interval (a, b). Then why we don't discuss its differentiability in the closed interval [a , b] because ……..

a) f'(a) and f '(b) never exist
b) f'(a)= f '(b) = 0
c) f(a)= f (b) = 0
d) f(a) and f (b) never exist

75. If f(x) = Sin(x) + x, then which of the following is true about it.

a) Its anti – derivative is
Cos (x) + x ^ 2/2+10
b) Its anti – derivative is
Cos (x) + 1.
c) None of these

d) Its anti – derivative is
– Cos (x) + x ^ 2/2+10

76. The estimated area under f(x) = x^2 + 2 from

X = 1 to x = 3 with left end points for

n = 2 is ……..

a) None of these
b) 6
c) 5
d) 13

77. Which of the following is the sum of 5^ (k+1) where k hoes from 1 to 3?

a) 775
b) 675
c) 875
d) 525