MALLA REDDY ENGINEERING COLLEGE (Autonomous)
I B.Tech – II Semester (MR15) I- Mid Question Bank
Subject: Computational Mathematics
(Common for CE, ME, CSE and Min.E)

MODULE – I

1. If f(x) is continuous in the interval [a, b] and f (a) &f (b) are of opposite signs, then the equation f(x) =0 has at least one root between_____ [ ]
   a) f(a) & f(b) b) a & b c) f(a) & a d) None
2. If f(x) = x-cosx, by bisection method root may lie between_____ [ ]
   a) 0 & 1 b) 1 & 2 c) 2 & 3 d) None
3. If f(x) = $4\sin x - e^x$, by bisection method root may lie between_____ [ ]
   a) 0 & 1 b) 1 & 2 c) 2 & 3 d) None
4. If f(x) = x^3-x-1, by bisection method root may lie between_____ [ ]
   a) 0 & 1 b) 1 & 2 c) 2 & 3 d) None
5. If f(x) = x^3-4x-9, by bisection method root may lie between_____ [ ]
   a) 0 & 1 b) 1 & 2 c) 2 & 3 d) None
6. If f(x) = $x\log_{10}x$-1.2, by bisection method root may lie between_____ [ ]
   a) 0 & 1 b) 1 & 2 c) 2 & 3 d) None
7. Which method is Convergence is very slow _____ [ ]
   a) Bisection b) Iteration c) Newton-Raphson d) The method of false position
8. If f(x) = x^3-2x-5, by method of false position root may lie between _____ [ ]
   a) 2 & 3 b) 1 & 2 c) 0 & 1 d) 3 & 4
9. If f(x) = x^3-x-1, by method of false position root may lie between _____ [ ]
   a) 2 & 3 b) 1 & 2 c) 0 & 1 d) 3 & 4
10. Which of the following method is more accurate in finding root of equation [ ]
    a) Bisection b) Iteration c) Newton-Raphson d) False position Method
11. If f(x) = $x^2 - \log_e x$ -12, by method of false position root may lie between _____ [ ]
    a) 2 & 3 b) 1 & 2 c) 0 & 1 d) 3 & 4
12. If f(x) = x^3-5x-7, by method of false position root may lie between _____ [ ]
    a) 2 & 3 b) 1 & 2 c) 0 & 1 d) 3 & 4
13. The Regula-Falsi Method is also called as _____ [ ]
    a) Bisection b) Iteration c) Newton-Raphson d) False position Method
14. If f(x) = xe^x-2, by method of false position root may lie between _____ [ ]
    a) 2 & 3 b) 1 & 2 c) 0 & 1 d) 3 & 4
15. If f(x) = $x^6 - x^4 - x^3$-1, by method of false position root may lie between _____ [ ]

a) 2 & 3 b) 1 & 2 c) 0 & 1 d) 3 & 4

16. If f(x) = 2x-3sinx-5, by method of false position root may lie between _____ [ ]

a) 2 & 3 b) 1 & 2 c) 0 & 1 d) 3 & 4

17. If f(x) = x^2- $\log e^x$-12, by method of false position root may lie between _____ [ ]

a) 2 & 3 b) 1 & 2 c) 0 & 1 d) 3 & 4

18. The iterative formula is also called as _____ [ ]

a) Successive approximation method b) False Position Method

c) Bisection method d) None

19. The iteration formula for the Regula-Falsi method is _____ [ ]

a) $x_{n-1} = \frac{x_{n-1}f(x_n)-x_nf(x_{n-1})}{f(x_n)-f(x_{n-1})}$ b) $x_n = \frac{x_{n-1}f(x_n)-x_nf(x_{n-1})}{f(x_n)-f(x_{n-1})}$

a) $x_{n+1} = \frac{x_{n-1}f(x_n)-x_nf(x_{n-1})}{f(x_n)-f(x_{n-1})}$ d) None

20. If f(x) = x^2- 9x+1, by interval halving method root may lie between ____ [ ]

a) 2 & 3 b) 1 & 2 c) 0 & 1 d) 3 & 4

21. If f(x) is continuous in the interval [a, b] and f (a)< 0 & f (b)> 0 for the equation f(x) =0, then the first iteration using bisection method is _____ [ ]

a) $\frac{f(a)+f(b)}{2}$ b) $\frac{a+b}{n}$ c) $\frac{a+b}{2}$ d) None

22. The Formula for Newton-Raphson method is _____ [ ]

a) $x_{n+1} = x_n - \frac{f(x_n)}{f'(x_n)}$ b) $x_n = x_n - \frac{f(x_n)}{f'(x_n)}$ c) $x_{n+1} = x_{n+1} - \frac{f(x_n)}{f'(x_n)}$ d) None

23. If f(x) = e^x-3x by method interval halving method root may lie between ____ [ ]

a) 2 & 3 b) 1 & 2 c) 0 & 1 d) 3 & 4

24. If f(x) = sinx+x-1 by Newton-Raphson method root may lie between ____ [ ]

a) 2 & 3 b) 1 & 2 c) 0 & 1 d) 3 & 4

25. If f(x) = xe^x-1 by Newton-Raphson method root may lie between ____ [ ]

a) 2 & 3 b) 1 & 2 c) 0 & 1 d) 3 & 4

26. An example of an algebraic equation is_____ [ ]
a)tanx=e^x b)x=logx c)x^3-5x+3=0d)None

27. An example of a trascedental equation is _____ [ ]
a)x^2-2x+5=0 b)x^3+x^2-3=0 c)x^3e^x=5d)None

28. In finding a real root of the equation x^3-x-10=0 by bisection if the root lies between a=2 and b=3 then x=_____ [ ]
a)2.5 b)2.75 c)2.60 d)None

29. _____ is used to find the iterative formula for Newton-Raphson method geometrically [ ]

a) Tangent b) Chord c) Directrix d) None

30. The approximate value of x=2.1714 exact value is x=2.17 then the absolute error in the solution is _____ [ ]
a)0.014 b)0.14 c)0.0014 d)None

31. Rounding number of 1.6583 upto 3 decimal places is_____ [ ]
a)1.683 b)1.659 c)1.658 d)None

32. The Rounded-off number of 30.0567 upto 2 decimal places _____ [ ]
a)30.057 b)30.06 c)30.056 d)None

33. If x is the true value and x_1 is the approximate value then absolute error E_A=_[ ]
a)$x - x_1$ b)$x-x_1/x$ c) $(x_2-x_1)/x$ d) None

34. If x is the true value and x_1 is the approximate value E_A is absolute error then relative error E_R=_____ [ ]
a) E_A/x b)100x E_A c)None

35. If E_A is absolute error and E_R relative error then percentage error E_p=__ [ ]
a)100x E_A b)100x E_R c) E_A/ E_R d)None

36. Geometrically the root of the equation is a point on the _____ [ ]
a)x-axis b)y-axis c)z-axis d)None

37. If α is the root of the equation then f(α)= _____ [ ]
a)0 b)1 c)2 d)None

38. If a and b are the two values between which the root of equation f(x)=0 lies then the iterative formula to find the root of the equation in bisection method [ ]
a)a+b/2 b)a-b/2 c)a+2b/2 d) None

39. The order of convergence in Newton-Raphson method is ------ [ ]
a)1 b)2 c)0 d)none

40. The root of the equation $x^3-3x+1=0$ lies between [ ]
a)1 and 2 b)2 and 3 c)3 and 4 d)none

41. In the iterative method to express $x=\Phi(x)$, $|\Phi^1(x)|$ must be --------in the interval I containing root [ ]
a) greater than 1 b)less than 1 c)not equal to 1 d)none

42. The root of the equation $x^3+x^2-1=0$ lies in the interval---------- [ ]
a)(0,1) b) (1,2) c (2,3) d)none

43. _____ is used to find the iterative formula for Regula-falsi method geometrically [ ]
a) Chord b) Tangent c) Directrix d) None

44. The root of the equation 3x-cosx-1=0 lies in the interval ------- [ ]
a)(0,1) b) (1,2) c) (2,3) d)none

45. The root of the equation e^x-3x=0 lies in the interval -------- [ ]
a) (0,1) b) (1,2) c) (2,3) d)none

46. The root of the equation xsinx=1 lies in the interval--------- [ ]
a)(0,1) b) (2,3) c) (1,2) d)none

47. If 1.3754 67is the exact root and 1.3754 is the approximate root of the equation f(x)=0 then the error in the root is--- [ ]
a)0.000067 b)0.00067 c)0.0067 d)none

48. If $\propto$ is the root of the equation f(x)=0 then f($\propto$) =-------- [ ]
a)1 b)0 c)2 d)none

49. Finding root of the equation ax^2 + bx+c=0 by using x= $\frac{-b\pm\sqrt{b^2-4ac}}{2a}$ is a _____method
a)direct method b)iterative method c)both d)none [ ]

50. Rounding the number 0.859378 upto four significant figures results in ---------- [ ]
a) 0.85937 b)0.8593 c) 0.8594 d)none

MODULE - I

KEY:

1.b 2. a 3. a 4. b 5.c 6. c 7. a 8. a 9.b 10. c 11. d 12.a 13. d 14. c 15. c 16. a

17. d 18. a 19. a 20. a 21.c. 22.a 23.c 24. c 25. c 26. c 27. c 28. a 29. a 30. c 31. c

32. b 33. a 34. a 35. b 36. a 37. a 38.a 39.c 40.a 41. b 42. a 43.a

44. b 45.a 46. c 47. a 48.b 49.a 50. c

MODULE – II

1. The value E^{-1} = _____ [ ]

   a) $1+\Delta$ b) $1-\Delta$ c) $1-\Delta^{-1}$ d) None

2. If f(x) is a polynomial of degee n and the values of x are equally spaced Then the nth order difference is always _____ [ ]

   a) Constant b) variable c) Non-zero value d) Zero

3. From the following which is correct [ ]

   a)$\mu = 1+\delta^2$ b) $\mu^2 = 1-\delta^2$ c) $\mu^2 = 1+\frac{1}{3}\delta^2$ d) None

4. In the Newton's forward interpolation formula p value always [ ]

   a) Zero b) Negative c) Positive d) None

5. If 'Δ' is the forward difference operator then $\Delta^3 y_0$ = [ ]

   a)$y_3+3y_2+3y_1+y_0$ b) $y_3-3y_2+3y_1-y_0$ c) $y_3+3y_2-3y_1-y_0$ d)none

6. Gauss-Backward Interpolation formula is used to interpolate the values of y for [ ]

   a) $-1<p<0$ b) $-\infty<p<0$ c) $0<p<1$ d) $0<p<-1$

7. The n^{th} order difference of a polynomial of n^{th} degree is _____ [ ]

   a) polynomial of $(n-1)^{th}$ degree b)Constant c)Polynomial of first degree d) zero

8. The relation between E and ∇ is_____ [ ]

   a) $\nabla = 1+E^{-1}$ b) $\nabla = 1+E$ c) $\nabla = 1-E$ d) $\nabla = 1-E^{-1}$

9. Given that

X	1	2	3
Y	3	8	15

   Then $\Delta^2 f(1)$ =_____ [ ]

   a)4x b)2 c)4x-8 d) none

10. $\Delta f(x)$= _____ [ ]

    a) f(x)- f(x-h) b) f(x)+ f(x-h) c)f(x+h)- f(x) d) None

11. $f(x)= x^2 +2x+1$ and h =3 then $\Delta f(x)$=_____ [ ]

    a)4x b)4x+8 c)4x-8 d) none

12. Given

X	0	1	2
Y	7	10	13

    By Newton's forward interpolation formula y(2.5)=_____ [ ]

    a)14.5 b)16.75 c)16.25 d) None

13. If D is the differential operator and h is the difference between equally spaced arguments then e^{hD} _____ [ ]

a)E b) E^{-1} c)Δ d) none

14. Consider

x	1	2	3
y	1	1.8	3.3

To find y at x=0.8 , we use _____ [ ]

a)Newtons forward formula b) Newtons backward formula c) Gauss formula d) none

15. Consider

x	15	25	35
y	111	118	123

To find y at x=16 , we use _____ [ ]

a) Newtons forward formula b) Newtons backward formula c) Gauss formula d) None

16. Consider

x	15	29	35
y	111	118	123

To find y at x=16 , we use _____ [ ]

a)Newtons forward formula b) Newtons backward formula c) Gauss formula d) none

17. Consider

x	19	29	39
y	1	1.8	2.4

To find y at x=16 , we use _____ [ ]

a)Newtons forward formula b) Newtons backward formula c) Gauss formula d) none

18. $1+\Delta=$ _____ [ ]

a) E b) E^{-1} C)D d)none

19. The relation between E and ∇ is_____ [ ]

a) $\nabla = 1+E^{-1}$ b) $\nabla = 1+E$ c) $\nabla = 1-E$ d) none

20. $1+\frac{1}{4}\delta^2 =$ _____ [ ]

a)μ b) μ^3 c) μ^2 d)none

21. If$\Delta^n f(x)$ is constant then $\Delta^{n+1} f(x)=$_____ [ ]

a) 1 b) n c) n+1 d)0

22. If f(x) is a polynomial of degree 2016 then $\Delta^{2020} f(x)=$_____ [ ]

a) 2016 b) 2020 c) 2019 d) 0

23. $\Delta\cos x=$_____ [ ]

a) $\sin(x+h)-\sin x$ b)$\sin(x+h)+\sin x$ c)$\cos(x+h)-\cos x$ d) none

24. $\Delta\log f(x)=$_____ [ ]

a)$\log f(x)$ b) $\log f(x+h)+f(x)$ c) $\log f(x+h)-f(x)$ d)$\log f(x+h)f(x)$

25. If$\Delta(e^x)=$_____ taking h=1 [ ]

a)$(e-1)(e^x)$ b))$(e+1)(e^x)$ c))$(e-1)^2(e^x)$ d) none

26. If$\Delta y= 1+2x+3x^2$ then which of the following is true _____ [ ]

a) $y= x^3+x^2$ b)$\Delta^3 xy=6$ c) $\Delta^4 y=0$ d) none

27. Gauss-forward Interpolation formula is used to interpolate the values of y for [ ]

a) $-1<p<0$ b) $-\infty<p<0$ c) $0<p<1$ d) $0<p<-1$

28. The following is used for unequal interval of x values _____ [ ]

a) Lagrange's formula b) Newton's forward formula c) Gauss' forward formula d) None

29. Which of the following formula is used to interpolating the values of y beginning of the table_____ [ ]

a) Newtons forward b) Newtons backward c)Gauss forward d)none

30. Which of the following formula is used to interpolating the values of y ending of the table_____ [ ]

a) Newtons forward b) Newtons backward c)Gauss backward d)none

31. Which of the following formula is used to interpolating the values of y center of the table_____ [ ]

a) Newtons forward b) Newton's backward c)Gaussformula d)none

32. The n^{th} order difference of a polynomial of n^{th} degree is _____ [ ]

a) polynomial of $(n-1)^{th}$ degree b)Constant c)Polynomial of first degree d) zero

33. The relation between E and ∇ is_____ [ ]

a) $\nabla=1+E^{-1}$ b) $\nabla=1+E$ c) $\nabla=1-E$ d) $\nabla=1-E^{-1}$

34. Given $f(x)= x^2+2x+1$ and h =3 then $\Delta f(x)=$_____ [ ]

a) 4x b)4x+8 c)4x-8 d) none

35. Using Gauss's forward interpolation formula to find y(22) from the table p value is [ ]

x	20	25	30	35	40	45
f(x)	354	332	291	260	231	204

a) 0.4 b)-0.6 c)0.6 d)none

36. To interporlate the y value for unequally spaced points we use_____ formula. [ ]

a)Newton-forward interpolating formula b)Newton-Backward interpolating formula

c)Gauss Interpolation formula d)Lagrange's interpolation formula

37. The unique polynomial p(x) of degree 2 or less such that [ ]

x	1	3	4
P(x)	1	27	64

a)$8x^2-19x+12$ b) $10x^2-19x+12$ c) $8x^2-25x+12$ d) $15x^2-20x+12$

38. The averaging operator μ is------ [ ]

a) $\frac{1}{2}(y_{r+\frac{1}{2}} + y_{r-\frac{1}{2}})$ b) $\frac{1}{4}(y_{r+\frac{1}{2}} + y_{r-\frac{1}{2}})$ c) $\frac{1}{6}(y_{r+\frac{1}{2}} + y_{r-\frac{1}{2}})$ d) $\frac{1}{8}(y_{r+\frac{1}{2}} + y_{r-\frac{1}{2}})$

39. The relation between Δ and E is ----------

a) $\Delta = E + 1$ b) $\Delta = E - 1$ c) $\Delta = 2E + 1$ d) $\Delta = E + 2$ [ ]

40. The relation between δ and E is----------Type equation here.

a) $\delta = E^{\frac{1}{2}} + E^{-\frac{1}{2}}$ b) $\delta = E^{\frac{1}{2}} + E^{\frac{3}{2}}$ c) $\delta = E^{\frac{1}{2}} - E^{-\frac{1}{2}}$ d) None

41. The relation between Δ and ∇ is ---------- [ ]

a) $\Delta = \nabla E$ b) $\nabla = \Delta E$ c) $\Delta = \nabla - 1$ d)none

42. The relation between δ and μ is ---------- [ ]

a) $\mu^2 = 1 + \frac{1}{4}\delta^2$ b) $\mu^2 = 1 - \frac{1}{4}\delta^2$ c) $\mu^2 = 1 + \frac{1}{4}\delta$ d)none

43. The relation between δ and E is---------- [ ]

a) $\delta = E^{\frac{1}{2}} + E^{-\frac{1}{2}}$ b) $\delta = E^{\frac{1}{2}} + E^{\frac{3}{2}}$ c) $\delta = E^{\frac{1}{2}} - E^{-\frac{1}{2}}$ d) None

44. The relation between Δ and ∇ is ---------- [ ]

a) $\Delta = \nabla E$ b) $\nabla = \Delta E$ c) $\Delta = \nabla - 1$ d)none

45. The relation between δ and μ is ---------- [ ]

a) $\mu^2 = 1 + \frac{1}{4}\delta^2$ b) $\mu^2 = 1 - \frac{1}{4}\delta^2$ c) $\mu^2 = 1 + \frac{1}{4}\delta$ d)none

46. The relation between μ and E is ---------- [ ]

a) $\mu = \frac{1}{2}(E^{\frac{1}{2}} + E^{\frac{-1}{2}})$ b) $\mu = \frac{1}{2}(E^{\frac{1}{2}} - E^{\frac{-1}{2}})$ c) $\mu = (E^{\frac{1}{2}} - E^{\frac{-1}{2}})$ d) None

47. $\sum_{k=0}^{n-1} \Delta^2 f_k$ = -------- [ ]

a) $\Delta f_n - \Delta f_0$ b) $\Delta f_n - \Delta f_0$ c) $\Delta f_n - \Delta f_0$ d)none

48. $(1+\nabla)(1-\nabla) - - - -$ [ ]

a)1 b)2 c)3 d)none

49. 19)μ δ = ---------- [ ]

a) $\frac{1}{4}(\Delta + \nabla)$ b) $(\Delta + \nabla)$ c) $\frac{1}{2}(\Delta + \nabla)$ d)none

50. $E^{-\frac{1}{2}}$ = --------- [ ]

a) $\mu - \frac{1}{2}\delta$ b) $\mu - \delta$ c) $\mu + \frac{1}{2}\delta$ d)none

MODULE - II

KEY:

1.d 2. a 3.d 4. c 5.b 6. a 7. b 8. d 9.b 10. c 11. d 12.a 13. a 14. a 15. a 16. d

17. a 18. a 19. d 20. c 21.d 22.d 23.c 24. d 25.a 26. c 27. c 28. a 29. a 30. b 31. c

32. b 33. d 34. d 35. a 36. d 37. a 38.a 39. b 40. d 41. a 42. a 43.a

44.a 45.a 46. a 47. a 48. a 49.c 50. a

MODULE - III

1) If $y=a+bx+cx^2$ then the third normal equation by least squares method is $\sum x^2y =$____ [ ]
   a) $na+b\sum x+c\sum x^2$ b) $a\sum x^2+b\sum x^3+c\sum x^4$ c) $a\sum x+b\sum x^2+c\sum x^3$ d) none
2) If $y=a+bx+cx^2$ is fitted to the data(x,y)are(-1,2),(0,1)and(1,4)then the second normal equation is____ [ ]
   a) 2a=2 b) 2a=3 c) 2b=2 d) 2c=2
3) If $y=a+bx+cx^2$ then the First normal equation by least squares method is $\sum y =$____ [ ]
   a) $na+b\sum x+c\sum x^2$ b) $a\sum x^2+b\sum x^3+c\sum x^4$ c) $a\sum x+b\sum x^2+c\sum x^3$ d) none
4) If $y=a+bx+cx^2$ then the Second normal equation by least squares method is $\sum xy =$____ [ ]
   a) $na+b\sum x+c\sum x^2$ b) $a\sum x^2+b\sum x^3+c\sum x^4$ c) $a\sum x+b\sum x^2+c\sum x^3$ d) none
5) If $y=ax+\frac{b}{x}$ then the First normal equation to fit the curve is $\sum xy =$_____ [ ]
   a) $na+b\sum x$ b) $na+b\sum x^2$ c) $a\sum x^2+nb$ d) $a\sum x+nb$
6) If $y=a+bx^2$,then the First normal equation to fit the curve is $\sum y =$_____ [ ]
   a) $na\sum x+b\sum yx^2$ b) $na+b\sum x^3$ c) $na+b\sum x^2$ d) $na\sum x+b\sum x^2$
7) If $y=a+bx^2$,then the First normal equation to fit the curve is $\sum x^2y =$_____ [ ]
   b) $a\sum x+b\sum x^3$ b) $a\sum x^2+b\sum x^4$ c)$a\sum x^4+b\sum x^6$ d) $a\sum x+b\sum x^2y$
8) If y=a+bx, the First normal equation is $\sum y$=_____ [ ]
   a) $a\sum x+b\sum x^3$ b) $a\sum x^2+b\sum x^4$ c) $na+b\sum x$ d) $a\sum y_i+b\sum x^2_i\, y_i$
9) If y=a+bx, the second normal equation is $\sum xy$=_____ [ ]
   a) $a\sum x+b\sum x^3$ b) $a\sum x+b\sum x^2$ c) $na+b\sum x$ d) $a\sum y_i+b\sum x^2_i\, y_i$
10) If $y=ab^x$, $\sum x=36$, $\sum x^2=204$, n=8, $\sum$logy=3.7393, $\sum$xlogy=22.7385 then the first normal equation to fit the curve is [ ]
   a) 8a+36logb=3.7393 b) 8loga+36log(B)=3.7393 c)8loga+36b=3.7393 d)8a+36b=3.7393
11) If $y=a+bx+cx^2$ is fitted to the data(x,y)are (0,1), (1,1.8), (2,1.3), (3,2.5), (4,6.3) then the third normal equation is_____ [ ]
   a) 5a+10b+30c=12.9 b) 5a+10b+29c=15 c) 5a+10b+31c=15 d) none
12) If $y=a+bx+cx^2$ is fitted to the data(x,y)are (0,1), (1,1.8), (2,1.3), (3,2.5), (4,6.3) then the first normal equation is_____ [ ]
   a) 5a+10b+30c=12.9 b) 5a+10b+29c=15 c) 5a+10b+31c=15 d) 5a+10b+28c=35.1
13) If $y=ab^x$, then the first normal equation is $\sum$logy=_____ [ ]
   a) $na+b\sum x$ b) nloga+ $b\sum x$ c) $a\sum x+b\sum$logx d) nloga+ $b\sum$logx
14) If y=a+bx, $\sum x$ =15, $\sum y$ =30 ,$\sum xy$ =110 ,$\sum x^2$ =55, then a_1=_____ [ ]
   a) 1.89 b)2.5 c)1.2 d)2
15) If y=2x+5 is the best fit for 6 pairs of values(x,y) by the method of least-squares, find $\sum x_i$ if $\sum y_i$=120. [ ]
   a) 40 b)35 c)45 d)30
16) Curve fitting method uses=_____ [ ]
   a) Least root method b) Least method c) Least square method d) all

17) If y=a+bx+cx^2 is fitted to the data(x,y)are (-1,2), (0,1) and (1,4) then the first normal equation is____ [ ]

a) 2a+2b=6 b) 3a+3b=6 c) 2a+3b=6 d) 3a+2b=6

18) If ∑x =15, ∑y =30 ,∑xy =110 ,∑x^2 =55, and If y=a+bx then a= _____ [ ]

a) 2.2 b)1.52 c)1.2 d) 0

19) If z=a+bx+cy is fitted to the data(x,y,z) are (0,0,2),(1,1,4), (2,3,3), (4,2,16) and (6,8,8) then the second normal equation is_____ [ ]

a) 13a+58b+63c=122 b) 13a+57b+65c=122 c) 13a+57b+63c=122 d) none

20) If y=ae^{bx} then the First normal equation is ∑log y =_____ [ ]

a) na+b∑x b) n $log_e^a + b$∑x c) a∑x+bx^2 d) a∑logy+b∑x

21) If z=a+bx+cy is fitted to the data(x,y,z) are (0,0,2),(1,1,4), (2,3,3), (4,2,16) and (6,8,8) then the third normal equation is_____ [ ]

a)14a+63b+78c=108 b) 14a+63b+79c=109 c) 15a+63b+78c=109

d) none

22) Certain experimental values of x and y are given;(0,1),(2,5),(5,12),(7,20) if y=a+bx then the first normal equation is [ ]

a) 4a+16b=36 b)5a+16b=40 c) 4a+14b=36 d) 4a+15b=36

23) If z=a+bx+cy is fitted to the data(x,y,z) are (0,0,2),(1,1,4), (2,3,3), (4,2,16) and (6,8,8) then the first normal equation is_____ [ ]

a) 5a+13b+15c=33 b) 5a+13b+14c=33 c) 6a+13b+14c=33 d) none

24) If y=a+bx+cx^2 is fitted to the data(x,y)are (-1,2), (0,1) and (1,4) then the first normal equation is____ [ ]

a) 3a+2b=7 b) 3a+3b=7 c) 2a+3b=9 d) 3a+2b=8

25) Certain experimental values of x and y are given;(0,-1),(2,5),(5,12),(7,20) if y=a+bx then the second normal equation is [ ]

a) 14a+76b=210 b)14a+78b=210 c) 15a+78b=210 d) none

Key:

1.b	2. a	3.a	4.c	5.c	6.c	7.b	8.c	9.b	10.b	11.d	12.a	13.d
14.d	15.c	16.c	17.a	18.d	19.c	20.b	21.d	22.c	23.b	24.a	25.b	