M.K.G CA EDUCATION

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MATH ASSIGNMENT NO. 12

Maximum Marks: - 100   **Time: 2 Hours**

01. Line Diagram is used for

   a) Finding relation in two variables

   b) comparison purpose

   c) finding the trend

   d) None of these

02. For comparing data the most suitable diagram is

   a) Line Diagram

   b) Bar Chart

   c) Frequency Polygon

   d) None of these

03. There are ------------------ types of Bar chart

   a) Two

   b) three

   c) four

   d) none of these

04. Vertical Bar graph is used for

   a) Quantitative data

   b) Qualitative data

   c) Both (a) and (b)

   d) Neither (a) nor (b)

05. Horizontal Bar chart is used for

    a) Qualitative Data

    b) Quantitative data

    c) either (a) or (b)

    d) neither (a) nor (b)

06. Divided Bar chart is considered for

    a) Comparing different components of variables

    b) Relation of different components to the table

    c) both (a) and (b)

    d) none of these

07. The distribution of profit of a company follows

    a) J shaped frequency curve

    b) U shape frequency curve

    c) Bell shaped frequency curve

    d) none of these

08. Commuters in Delhi Metro follows

    a) U shape curve

    b) J shape curve

    c) Bell shape curve

    d) None of these

09. Mixed Curve is combination of

    a) J shape curve and U shape curve

    b) Bell shape curve and U shapr curve

    c) Combinations of all the three curve

    d) None of these

10. Most of the commonly used frequency curves are

    a) Bell shaped Curve

    b) U shaped Curve

c) J shaped curve

d) None of these

11. Subjective Probability may be used in

a) Mathematics

b) Statistics

c) Management

d) None of these

12. The cost of living index is always

a) weighted index

b) Price Index

c) Quantity Index

d) None of these

13. Which is not an inferential data

a) Statement taken from Audit Report

b) Statement taken from Census Report

c) Statement taken from financial statements

d) none of these

14. Profit of a newly started company follows

a) J shape Curve

b) U shape curve

c) Bell shaped curve

d) none of these

15 Which distribution may be called Uni Modal

a) Binomial Distribution

b) Poisson Distribution

c) Normal Distribution

d) None of these

16. In which of the following Distribution Mean is square of Standard Deviation

a) Binomial Distribution

b) Poissons Distribution

c) Normal Distribution

d) None of these

17. Find semi quarterly installment if a loan of Rs 65 lakh is repayable in 6 years @ 10% pa

a) Rs 1,90,800

b) Rs 1,80,900

c) Rs 1,12,900

d) none of these

18 A company had declared dividend @ Rs 220 per share just 4 years back with a growth of 8% if Cost of equity is computed as 23% the Market Price of share is

a) Rs 2015

b) Rs 1995

c) Rs 1880

d) None of these

19. The Binomial Distribution with maximum variance will have Probability equal to

a) 1/2

b) 2/3

c) data insufficient

d) can not be computed without the value of n and a

20. A company wishes to replace a plant costing Rs 42 lakh after a period of 7 years when prices will be increased by 15% and there will be realization of scrap of Rs 3.20 lakh, How much annual provision is required if opportunity cost is 11% pa.

a) Rs 4,60,990

b) Rs 4,89,800

c) Rs 3,90,900

d) none of these

21. A company wants to invests 200 lacs in a technical feasible project which may give annual income of Rs 20 lacs for next 10 years and Rs 5,00,000 pa after that on perpetual basis, if opportunity cost is 13% pa find whether project is viable financially

a) viable and should be invested

b) not viable should not be invested

c) opportunity cost is very high so it is not viable

d) none of these

22. In the -----------------distribution the Standard Deviation is square root of Mean

a) Binomial Distribution

b) Poisson Distribution

c) Normal Distribution

d) None of these

23. A 4 digit number is formed with 3 4 5 6 and 7 Find Probability number will be even number greater than 6500

a) 1/10

b) 12/36

c) 3/10

d) none of these

24. If the word AMBUGUITY is written in different ways Find Probability vowels will occupy only odd places

a) 3/126

b) 4/126

c) 5/126

d) None of these

25. If 9 is added to all the observation C/V becomes 10% while it becomes 20% if 9 is deducted from all the observations. Find C/V is 15 is added to all the observations

a) 8.57%

b) 13.33%

c) 12.87%

d) none of these

26. If X and Y are related to 4x-7y +9=0 and MD_x is computed as 7the variance of (2y-6) will be

a) 100

b) 50

c) 94

d) none of these

27. find square root of 13-$\sqrt{168}$

   a) $\sqrt{7} + \sqrt{6}$

   b) $\sqrt{8} + \sqrt{5}$

   c) $\sqrt{9} + 2$

   d) none of these

28. If the word BUDGET is written in dictionary the rank of word is

   a)98th

   b) 99th

   c)102nd

   d0 none of the above

29. How many different factors can be formed with 25900

   a) 36

   b) 8

   c) 16

   d) none of these

30. A boy has 3 library tickets and 8 books of his interest he can not borrow Economic book unless he borrows statistics in how many ways he can borrow books of his choice

   a) 41

   b) 65

   c) 36

   d) none of these

31. A supreme court bench has 7 judges in how many ways they can give majority decision

   a) 64

   b) 127

   c) 56

d) none of these

32. 7 persons A B C D E F and G are to be seated in a circle, in how many ways can this be done if A must always have B or C on his right and B must have either C or D on his right

    a) 12

    b) 18

    c)21

    d) none of these

33. Find the number of arrangements of 6 things taken out of 13 in which two particular things must always be included.

    a) 237600

    b) 243900

    c) 324600

    d) none of these

34. a polygon has 90 diagonals, the number of sides are

    a) 15

    b) 12

    c) 18

    d) none of these

35. In many ways minimum 3 and maximum 9 friends can be invited out of 11 friends

    a) 1969

    b) 1981

    c) 2048

    d) none of these

36. 6 girls and 3 boys are made to sit in a circle find probability 2 particular boys are never together

    a) 30240

    b) 29780

    c) 31560

    d) none of these

37. A sum of Rs 4,90,000 is divided into 3 parts such that the corresponding interest earned after 2 3 and 5 years is equal if the rates of simple interest is 7% 8% and 10% respectively. ,the largest part is

    a) 2,62,970

    b) 1,53,399

    c)   73,634

    d) none oof these

38. Find present value if Rs 30,000 pm is receivable for 5 years staring from today @ 9% p.a.

    a) 14,26,040

    b) 14,56,040

    c) 13,96,040

    d) None of these

39. A house is purchased on EMI of Rs 40,000 for next 12 years and an amount of RS 15 lakh after the completion of installments, the cost of house is if rate of interest is @ 9% p. a.

    a) 40,26,290

    b) 50,14,840

    c) 45,14,850

    d) none of these

40. An asset is purchased on EMI of Rs 20,000 for next 9 years @ 6% p.a. starting from today and after that Rs 10,000 quarterly on perpetual basis, the cost of asset is

    a) 23,36,534

    b) 16,65,868

    c) 25,66,667

    d) none of these

41. The company had declared dividend @ 12% on equity share of Rs 300 whose market price is Rs 560 with a growth of 8%, the cost of equity is

    a) 6.41%

    b) 6.94%

    c) 14.42%

    d) none of these

42. The net growth in economy after 8 years if growth rate is 12% and inflation rate is also 12% is

    a) remain same

    b) increase by 12 %

    c) will reduce by the inflation rate

    d) none of these

43. If co domain is equal to Range the function is

    a) one to one onto

    b) many to one into

    c) many to many onto

    d)none of these

44. For 10 pairs of observations, number of concurrent deviations was found to be 4 . what is the value of r by rank differential method

    a) .57

    b) -.57

    c) -.33

    d) none of these

45. The coefficient of correlation is significant if

    a) r> 6 P.E.

    b) r< 6 P.E

    c) r=6 P.E.

    d) None of these

46. If r is computed as .6 the co efficient of non co relation is

    a) .80

    b) .64

    c) .36

    d) none of these

47. The Arithmetic Mean of regression co efficient is

    a) equal to r

b) greater than r

c) less than r

d) none of these

48. If r=2/√10 and n is 36 the Probable error may be

a) .6745

b) .0675

c) .5287

d) none of these

49. while computing co efficient of correlation by Karl person method the r and P.E is computed as .90 and .04 the value of n is

a) 10

b) 11

c) 9

d) none of these

50. The quickest method of computing co relation and co efficient of determination is

a) Scattered Diagram method

b) Method of Karl Pearson

c) Rank Differential method

d) Concurrent Deviation method

51. The co variance of x and y for the data (x Y) =(1 5) (2 4) (3 3) (4 2) and (5 1) is

a) 2

b) -2

c) 3

d) none of these

52.The coefficient of concurrent deviation for p pairs of observations was found as 1/√3 and number of con-currents was found to be 6 then value of p is

a) 10

b) 9

c) 8

d) none of these

53. While computing co efficient of co relation by Rank Differential method of 9 items the difference in rank is wrongly taken as 5 instead of 7 if computed r =.69 find correct co efficient of co relation

a) .51

b) .49

c) low degree negative

d) none of these

54. the best method of computing co relation in attributes

a) Rank Differential method

b) Method of Karl Pearson

c) Concurrent Deviation Method

d) none of these

55. Two regression lines are given as 7x+2y +15=0 and 2x+5y+10=0 the co efficient of alienation is

a) -.31

b) .31

c) .94

d) none of these

56. If r = .70 and n = 36, the correlation is

a) significant

b) non significant

c) non associated

d) none of these

57. Which of the following affects change of regression co efficients

a) Change of origin

b) Change of Scale

c) both (a) and (b)

d) none of the above

58. If 2 variables are unrelated their regression lines are

    a) parallel

    b) perpendicular

    c) coincide

    d) none of these

59. If Means of X and Y are 20 and 40 respectively and regression co efficient Y on X is 1.608 the line Y on X will be

    a) Y=1.608X +7.84

    b) Y=1.56 X + 4.84

    c) Y=1.608X + 4.84

    d) none of these

60. Both the regression lines pass through

    a) Mean

    b) Standard Deviation

    c) Median

    d) none of these

61. If value of r=1 both the regression lines are

    a) parallel to each other

    b) coincide

    c) both (a) and (b)

    d) none of these

62. The equation Y=a+Bx and X=a+BY are based on method of

    a) Least square

    b) Karl Pearson

    c) Greatest Square method

    d) none of these

63. The standard error of estimate of Y ON X is

a) SD$_X$ (co efficient of alienation)

b) SD$_Y$ (co efficient of alienation)

c) SD$_Y$ (non determination)

d) none of these

64. From the following data

	X	Y
Mean	90	120
Variance	36	25
Non determination		64%

The estimated value of Y at X=500

a) 475
b) 325
c) 530
d) None of these

65. Find annual provision if 1,00,00 !2% Debentures of Rs 200 are to be redeemed after 7 years at 8% discount if opportunity cost is 12% p.a

a) 18,23,786

b) 19,28,980

c) 18,73,780

d) none of these

66. An amount becomes Rs 9,80,000 in 3 years on simple interest and Rs 11,15,000 in 6 years, The rate of interest is

a) 5.98%

b) 5.32%

c) 6.19%

d) none of these

67. An amount becomes Rs 2,80,000 in 3 years and Rs 3,60,000 in 6 years if compounded annually the rate of interest is

a) 7.67%

b) 9.56%

c) 8.74 %

d) none of these

68. an asset costing Rs 32,00,000 was depreciated @ 15% p a on diminishing balance method if written down value of plant is Rs 5,78,00, how old the plant is

   a) 10 yrs 7 months

   b) 10 yrs 10 months

   c) 10 yrs 9 months

   d) none of these

69. The cost of plant which was purchased 7 years back is Rs 65,00,000 if the book value is Rs 15,90,000 the rate of depreciation is

   a) 18.23%

   b) 17.89%

   c)   19.32%

   d) none of these

70. If $f(x) = 1/(1-x)$ and $g(x) = (x-1)/x$ the value of $gof(x)$ is

   a) x-1

   b) x

   c) 1/x

   d) none of these

71. If $f(x) = 4x-9$ the inverse of $f(x)$ is

   a) (x+9)/4

   b) (x-9)/4

   c) (4x+9)/3

   d) none of these

72. $f(x) = (2+x) / (2-x)$ the inverse of $f(x)$ is

   a) 2(x-1)/1+x

   b) x+1/x-1

   c) 2x+2/x-1

d) none of these

73. "Is smaller than" over the set of all Real numbers the Relation is

a) Reflexive

b) Symmetrical

c) Transitive

d) Equivalence

74. " Is equal to " over the set of all real numbers the Relation is

a) Reflexive

b) Symmetrical

c) Transitive

d) Equivalence

75. " Is perpendicular to" over the sets of straight lines the Relation is

a) Reflexive

b) Symmetrical

c) Transitive

d) Equivalence

76. At a certain conference of 1000 people there are 290 Indian women and 230 Indian men .Out of Indians 40 are doctors and 240 are either Men or doctors . Find number of women doctors if there is no foreigner doctor.

a) 10

b) 20

c) 40

d) none of these

77. Out of 200 employees in an office 48% prefer coffee, 54% like Tea ,64% are smokers. out of the total 28% take both coffee and tea ,32% take tea and also smoke ,30% take coffee and smoke also but 6% don't take anything (tea coffee or smoke). The number of employee take all the three

a) 36

b) 48

c) 24

d) none of these

78. The bijective function is

   a) one to one onto

   b) one to one into

   c) many to one into

   d) none of these

79. Out of 1000 persons 40% take non veg. out of total 60% are male and 50% male members are non vegetarian find probability a person selected at random is vegetarian provided she is female

   a) 1/2

   b) 4/6

   c) 3/4

   d) none of these

80. If the word CORPORTE is written find Probability vowels always occupy odd places

   a) 5/126

   b) 121/126

   c) 32/126

   d) none of these

81. There are two bags 1 and 2 containing 5 Red and 6 black balls and 4 Red and 7 black balls. A pair of dice is thrown if difference in 2 numbers is 4 ball drawn from bag or else from bag no 2 find probability drawn ball is not Red

   a) 62/99

   b) 37/99

   c) 33/99

   d) none of these

82. A 4 digit number is formed with 3 4 5 7 8 and 9 find probability number formed lies in between 4500 and 7300.

   a) 7/20

   b) 6/20

   c) 9/20

d) none of these

83. 5 girls and 6 boys are made to sit in a circle find probability any 3 and only 3 girls are together

    a) 5/14

    b) 9/14

    c) 8/14

    d)none of these

84. If $^{m+n}c_3$ =720 and $^{m-n}c_3$ =336 the value of n is

    a) 1

    b) 9

    c) 3

    d) none of these

85. if 5 coins are tossed 1600 times in how many ways there will be at least 4 heads

    a) 200

    b) 350

    c) 250

    d) none of these

86. X is a Binomial variable with parameters 6 and ½ and y is another variable with parameters 4 and ½ ,the probability of (x+y >0) is

    a) .0010

    b) .9990

    c) .8976

    d) none of these 94

87. If a random variable x follows Normal Distribution with Mean as 60 and standard deviation as 20 what is the probability (x<80/x>60)

    a) .4056

    b) .5045

    c) .5167

    d) None of these

88. The distribution of salary in a corporate house is known to be normal with Mean of Rs 50,000 and Standard deviation with Rs 10,000. If 100 employees get a salary of less than Rs43,000 ,the number of workers in organization is

a) 494

b) 414

c) 521

d) none of these

89. If a poisson distribution is fitted to the following data

Mistake per page	0	1	2	3	4	5
Pages	76	74	29	17	3	1

The sum of expected frequency of $x = 0$ 1   and 2

a) 184
b) 150
c) 165
d) None of these

90. In a state the per capita income is computed as 43,000 with Range Deviation 26,000 but 10% people are living below poverty line, the income at poverty line is fixed at

a) 25900

b) 33750

c) 26230

d) none of these

91. in a manufacturing unit if 2.5% items are defective find probability out of 300 items not more than 2 items are defective

a) 2.02%

b) 2.89%

c) 2.56%

d) None of these

92. In a Probability Distribution with maximum variance the non probability is calculated as

a) 1/2

b) 2/3

c) 1/3

d) none of these

93. If C/V in Poisson Distribution is 50% find probability of non zero.

a) .0986

b) .0986

c) .9816

d) none of these

94. a pair of dice is thrown the probability it is not doublet provided a total of at least 9 does not appear is

a) 2/13

b) 11/13

c) 5/13

d) none of these

95.In a symmetrical Binomial Distribution the c/v is computed as 5%, the number of trials are

a) 400

b) 200

c) 300

d) none of these

96. The value of money is decreased to 76 % and D/A is increased by 24% how much more D/A is required to be paid

a) 7.50 %

b) 5.50%

c) not required

d) none of these

97. In how many ways 4 letters can be selected out of the word EXTERIORS

a) 36

b) 43

c) 28

d) none of these

98. A company charges Rs 550 per unit on an order of 50 units or less which is reduced by Rs 5 per unit if order exceeds 50 units. How many units are to be sold per day to make the Revenue maximum.

   a) 80 units

   b) 90 units

   c) 100 units

   d) none of these

99. If $C(X) = \frac{x^3}{10} - 3x^2 + 50x$ How many units are required to be produced so that AC= MC

   a) 20 units

   b) 15 units

   c) 18 units

   d) none of these

100. A company suffers a loss of Rs 1,000 if there is no sale at all. The MR and MC are 50-4x and x-10 respectively find the maximum Revenue of the unit

   a) Rs 312

   b) Rs 600

   c) Rs 288

   d) none of these