

M.K.G CA EDUCATION

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TEST-3

QUESTION BOOKLET CODE: MKG

QUESTION PAPER BOOKLET NO. 3102023

SET-A

ROLL NO.

CA FOUNDATION

(01-10-2023 3:00 P.M. TO 5:00 P.M)

Business Mathematics and Logical Reasoning & Statistics

FULL SYLLABUS

Time allowed: 2 hours

Maximum Marks : 100

Instructions:

1. Answer to be given in OMR sheet
 2. Negative marking applies
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1. While computing co efficient of co relation by Product Moment method of 36 items The Standard error is computed as 0.042, the upper limit of co relation is
 - (a) .832
 - (b) .888
 - (c) .862
 - (d) None of these
2. A Company had declared dividend @ Rs 300 three years back with 10% growth if cost of equity is 21% the Market Price of share is
 - (a) Rs 3,260
 - (b) Rs 3,630
 - (c) Rs 4,170
 - (d) None of these

3. Find Present Value of advance annuity of ₹ 15000 per month for next 4 years @ 9%p.a. be if started from immediate effect.
- Rs 6.07,293
 - Rs 5,92,293
 - Rs 5.77,293
 - None of these
4. An amount becomes double in 6 years if compounded semi-annually. How long it will take in becoming the amount triple if compounded monthly.
- 8 years 5 months
 - 9 years 3 months
 - 9 years 5 months
 - None of these
5. The effective rate of interest is @ 19.75% p.a. if compounded fortnightly, the nominal rate of interest will be
- 18%
 - 24%
 - 27%
 - None of these
6. The variance of Y is computed as 64 and coefficient of correlation between x and y is 0.40 the standard error of estimate of Y ON X is
- 7.42
 - 6.87
 - 8.65
 - None of these
7. An amount becomes 1.64 times in 8 years if on Simple interest after how much time it will become 4 times if rate of interest is 1% higher
- 33.33%
 - 27.89%
 - 32.76%
 - None of these
8. $\frac{20^n + 5^n}{20^{n-1} + 5^{n-1}} = 10$ find (n+3)
- 1/2
 - 7/2
 - 5/2
 - None of these
9. In two Arithmetic progressions if ratio of nth term is $(2n + 7) : (5n - 9)$ the ratio of sum of 200 terms is
- 987:208
 - 416:987
 - 52:242
 - None of these
10. $1 + \frac{6}{4} + \frac{11}{16} + \frac{16}{64} + \frac{21}{256} + \dots S_\infty$
- 32/9
 - 21/9
 - 23/9
 - None of these
11. An amount becomes Rs18700 in 2 years and Rs 21,700 in 3 years if on simple interest find r
- 12.28%
 - 33.62%
 - 19.11%
 - None of these

12. If economic growth of a country is 13% while inflation rate is 10.70% the net increase in Economy after 9 years will be
- 15.89%
 - 12.43%
 - 22.71%
 - None of these
13. If a project costing Rs 200 lacs will generate profit of Rs 23,00,000 for next 10 years and after that it will be sold for Rs 72.00 lakh find financial viability of project if cost of opportunity is 10% pa
- NPV is equal to project cost
 - Financial viable
 - Not viable financially
 - None of these
14. Find the missing value 1, 2, 10, 37, 101, 226.....
- 353
 - 412
 - 442
 - None of these
15. Find the missing value 1, 14, 39, 80, 141
- 226
 - 312
 - 207
 - None of these
16. Find the missing value 2, 20, 90, 272
- 432
 - 525
 - 650
 - None of these
17. Find the missing value 2, 24, 108, 320
- 750
 - 789
 - 830
 - None of these
18. Find the missing value 0, 15, 80, 255, 624
- 1295
 - 1480
 - 1165
 - None of these
19. $3x + 9y - 15 = 0$ and $4x + 24y + 30 = 0$ find coefficient of alienation
- .49
 - .50
 - .71
 - None of these
- 20.
- | | | | | | | | |
|----|----|----|----|----|----|----|----|
| X: | 30 | 30 | 30 | 40 | 50 | 20 | 35 |
| Y: | 40 | 45 | 50 | 55 | 35 | 25 | 20 |
- Find r_k
- .65
 - .70
 - .11
 - None of these

21. Find sum of all 5 digit numbers formed with 3 3 3 5 6
 (a) 8,88,880
 (b) 7.78.899
 (c) 6,76,980
 (d) None of these
22. A 4 digit number is formed with 1, 3, 4, 5, 7, 9 find probability number formed lies between 4300 and 7500
 (a) $\frac{2}{5}$
 (b) $\frac{3}{5}$
 (c) $\frac{1}{5}$
 (d) None of these
23. In an examination there are 2 parts A and B containing 7 and 9 questions respectively in how many ways at least 2 questions from each part can be solved.
 (a) 61650
 (b) 60240
 (c) Incomplete data
 (d) None of these
24. An amount becomes triple in 10 years if compounded quarterly. Find rate of interest
 (a) 6.98%
 (b) 7.56%
 (c) 8.32 %
 (d) None of these
25. A, B, C throw a pair of dice till doublet appears if A starts the game find Probability of winning C
 (a) 25/91
 (b) 30/91
 (c) 36/91
 (d) None of these
26. If x and y are related to $5x+8y-9=0$ and QD_x is computed as 40 the variance of $(2x+9)$ is
 (a) 14,400
 (b) 7.200
 (c) 3.600
 (d) None of these
27. In a manufacturing unit if 2.50% items produced are defective, the probability out of 300 items only 2 are defective is
 (a) 15.01%
 (b) 5.06%
 (c) 1.56%
 (d) None of these
28. If the word COMBINATION is written in different ways find Probability all vowels are not written in the starting of word
 (a) $\frac{1}{462}$
 (b) $\frac{461}{462}$
 (c) $\frac{3}{462}$
 (d) None of these

29. The Cost of producing 400 item is 2300 and cost of producing 900 item is 3800, the cost of producing 1500 items is
- 4580
 - 5600
 - 5740
 - None of these
30. In a normally distributed factory with 20,000 employees if 15% employees draw less than ₹ 20,000 and SD is computed as 6000 find average salary is ($z = 1.04$ at 35% Probability)
- 13,760
 - 26,240
 - 20,000
 - None of these
31. If 4th central moment in poisson's distribution is computed as 243 the C/V is computed as
- 33.33 %
 - 52.17%
 - 46.80%
 - None of these
32. A plant was depreciated @15% for first 4 years @ 20% for next 3 years and @25% for another 3 years. If written down value of the plant after 10 year is ₹ 3,74,000 the cost of plant is
- Rs 33,16,820
 - Rs 31,90,870
 - Rs 11,57,900
 - None of these
33. If $f(x) = \frac{1}{1-x}$ the inverse of $f(x)$ is
- $\frac{(x-1)}{x}$
 - $\frac{x}{x-1}$
 - $\frac{-x}{1-x}$
 - none of these
34. In the normally distributed factory with 30,000 employees if mean is computed as 40,000 and RD is computed as 27,000 how many workers draw salary Less than 13,000
- 342
 - 1368
 - 684
 - None of these
- 35.
- | | Red | Blue |
|---------|-----|------|
| Bag I | 6 | 7 |
| Bag II | 4 | 9 |
| Bag III | 8 | 7 |
- A pair of dice is thrown if doublet appears ball is drawn for Bag I, if at least 10 appears the ball is drawn from Bag II, find ball is drawn from Bag III and is found red
- $\frac{52}{135}$
 - $\frac{57}{135}$
 - $\frac{63}{135}$
 - None of these

36. The value of money is reduced by 29% and D/A is also increased by 30% how much more D/A, is required to be paid
- 10.84%
 - 40.84%
 - 20.84 %
 - None of these
37. What is the **Bijective** function
- One to one onto
 - One to one into
 - Many to one onto
 - None of these
38. If a, b, c are the T_p, T_q and T_r Terms of the GP, the value $a^{q-r} b^{r-p} c^{p-q}$ is
- 0
 - 1
 - 2
 - None of these

On the basis of following statement compute Questions 39 to 43

Sumit started walking in east direction from Point A, after walking 15km he reached point B from there he takes a left turn and walked 10km to reach Point C. From C he turns left and walk 7km to reach point D from where he takes left turn and reached point E by walking 34km. He turns right and walks 28 km to reach point F from where he walks 14km by taking right turn and finally reached Point G. From G after taking rest he turns right and walks 32 km to reach the destination at Place H.

39. The direction of G with Respect to A is
- South east
 - North east
 - South west
 - None of these
40. If Point J is the intersection in A, B and E, D which of the following is true
- H is to the north of J
 - $JE + JD = (GF - 6)$
 - J is to the south of D
 - None of these
41. Total distance travelled by Sumit in the west side
- 65 km
 - 64 km
 - 54 km
 - None of these
42. What is the direction of Point C with respect to H
- North west
 - East
 - North east
 - None of these
43. The direction of F from C is
- South East
 - South West
 - South
 - None of these

From the statement given below answer Question 44 to 48

A, B, C, D, E are sitting on a bench. A is sitting next to B. C is sitting next to D. D is not sitting with E, who is sitting on the extreme left. C is on the 2nd position from right side A is to the right of B and E. A and C are sitting together.

- 44.** In which position A is sitting
- Between B and D
 - Between B and C
 - Between D and E
 - None of these
- 45.** Who is sitting in the middle of row
- A
 - B
 - C
 - None of these
- 46.** How many students are sitting in the right of B
- 3
 - 1
 - 2
 - None of these
- 47.** Who are sitting in the extreme of two sides
- E & C
 - E & D
 - E & A
 - None of these
- 48.** Who is sitting between A and D
- C
 - B
 - E
 - None of these
- 49.** Find the missing 6, 9, 18, 45, 135, 472.50 ----
- 1890
 - 1090
 - 1140
 - None of these
- 50.** A theoretical probability distribution.
- Does not exist
 - Exists only in theory
 - Exists in real life
 - Both (b) and (c)
- 51.** For a normal distribution with mean as 500 and SD as 120, what is the value of k so that the interval [500, k] covers 40.32 % area of the normal curve? Given $z = 1.30$ at $p = .4032$
- 740
 - 750
 - 656
 - None of these
- 52.** Reaction in some medicine follow
- Normal Distribution
 - Poisson's Distribution
 - Binomial Distribution
 - None of these

53. The regression coefficients are zero if r is equal to
- 0
 - 1
 - 1
 - None of these
54. The circular test is an extension of
- The Factor Reversal Test
 - The Time Reversal Test
 - The Unit Test
 - None of these
55. Group index number is represented by
- $\frac{\text{Price Relative for the year}}{\text{Price Relative for the previous year}} \times 100$
 - $\frac{\sum(\text{Price Relative} \times w)}{\sum w}$
 - $\frac{\sum(\text{Price Relative} \times w)}{\sum w} \times 100$
 - None of these
56. An Ogive curve can be prepared in _____ different ways
- 2
 - 3
 - 4
 - None of these
57. The horizontal Bar graph is used for
- comparing the attributes
 - comparing the variables
 - Finding relation in 2 variables
 - none of these
58. For comparing data, the most suitable diagram is
- Line Diagram
 - Bar Chart
 - Frequency Polygon
 - None of these
59. Subjective Probability may be used in
- Mathematics
 - Statistics
 - Management
 - None of these
60. The cost of living index is always
- weighted index
 - Price Index
 - Quantity Index
 - None of these
61. Which is not an inferential data
- Statement taken from Audit Report
 - Statement taken from Census Report
 - Statement taken from financial statements
 - none of these

62. In which of the following Distribution Mean is square of Standard Deviation
- Binomial Distribution
 - Poissons Distribution
 - Normal Distribution
 - None of these
63. Find semi quarterly installment if a loan of Rs 65 lakh is repayable in 6 years @ 10% pa
- Rs 1,90,800
 - Rs 1,80,900
 - Rs 1,12,900
 - none of these
64. A 4-digit number is formed with 3 4 5 6 and 7 Find Probability number will be even number greater than 6500
- 1/10
 - 12/36
 - 3/10
 - none of these
65. If the word AMBIGUITY is written in different ways Find Probability vowels will occupy only odd places
- 3/126
 - 4/126
 - 5/126
 - None of these
66. If X and Y are related to $4x - 7y + 9 = 0$ and MD x is computed as 7 the variance of $(2y - 6)$ will be
- 100
 - 50
 - 94
 - none of these
67. Find square root of $13 - \sqrt{168}$
- $\sqrt{7} - \sqrt{6}$
 - $\sqrt{8} + \sqrt{5}$
 - $\sqrt{9} + 2$
 - None of these
68. If the word BUDGET is written in dictionary the rank of word is
- 98th
 - 99th
 - 102nd
 - None of these
69. 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
- 72
 - 18
 - 21
 - None of these
70. Find the number of arrangements of 6 things taken out of 13 in which two particular things must always be included.
- 237600
 - 243900
 - 324600
 - None of these

71. A polygon has 90 diagonals, the number of sides are
- 15
 - 12
 - 18
 - None of these
72. 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
- 2,62,970
 - 1,53,399
 - 73,634
 - none oof these
73. 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.
- 40,26,290
 - 50,14,840
 - 45,14,850
 - None of these
74. 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
- 23,36,534
 - 16,65,868
 - 25,66,667
 - None of these
75. If co domain is equal to Range the function is
- one to one onto
 - many to one into
 - many to many onto
 - none of these
76. For 10 pairs of observations, number of concurrent deviations was found to be 4 . what is the value of r by rank differential method?
- .57
 - .57
 - .33
 - None of these
77. The Arithmetic Mean of regression co efficient is
- Equal to r
 - Greater than r
 - Less than r
 - None of these
78. If $r = \frac{2}{\sqrt{10}}$ and n is 36 the Probable error may be
- .6745
 - .0675
 - .5287
 - none of these
79. 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
- 10
 - 11
 - 9
 - None of these

80. The quickest method of computing co relation and co efficient of determination is
- Scattered Diagram method
 - Method of Karl Pearson
 - Rank Differential method
 - Concurrent Deviation method
81. The coefficient of concurrent deviation for p pairs of observations was found as $1/\sqrt{3}$ and number of concurrents was found to be 6 then value of p is
- 10
 - 9
 - 8
 - None of these
82. 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
- $Y=1.608X + 7.84$
 - $Y=1.56 X + 4.84$
 - $Y=1.608X + 4.84$
 - none of these
83. The standard error of estimate of Y ON X is
- SD_X (co efficient of alienation)
 - SD_Y (co efficient of alienation)
 - SD_Y (non determination)
 - None of these
84. 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
- 18.23%
 - 17.89%
 - 19.32%
 - None of these
85. $f(x) = \frac{2+x}{2-x}$ the inverse of $f(x)$ is
- $\frac{2(x-1)}{1+x}$
 - $\frac{x+1}{x-1}$
 - $\frac{2x+2}{x-1}$
 - None of these
86. "Is equal to" over the set of all real numbers the Relation is
- Reflexive
 - Symmetrical
 - Transitive
 - Equivalence
87. 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.
- 10
 - 20
 - 40
 - None of these

88. Which of the following is not a two-dimensional figure?
- Line Diagram
 - Pie Diagram
 - Square Diagram
 - Rectangle Diagram
89. 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
- $\frac{1}{2}$
 - $\frac{4}{6}$
 - $\frac{3}{4}$
 - None of these
90. If the word CORPORTE is written find Probability vowels always occupy odd places
- $\frac{5}{126}$
 - $\frac{121}{126}$
 - $\frac{32}{126}$
 - None of these
91. 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
- $\frac{62}{99}$
 - $\frac{37}{99}$
 - $\frac{33}{99}$
 - None of these
92. From which graphical representation, we can calculate partition values?
- Lorenz curve
 - Ogive curve
 - Histogram
 - None of the above
93. 5 girls and 6 boys are made to sit in a circle find probability any 3 and only 3 girls are together
- $\frac{5}{14}$
 - $\frac{9}{14}$
 - $\frac{8}{14}$
 - None of these
94. If 5 coins are tossed 1600 times in how many ways there will be at least 4 heads
- 300
 - 350
 - 250
 - None of these
95. X is a Binomial variable with parameters 6 and $\frac{1}{2}$ and y is another variable with parameters 4 and $\frac{1}{2}$, the probability of $(x + y > 0)$ is
- .0010
 - .9990
 - .8976
 - None of these

96. 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) .6826
 - (b) .5045
 - (c) .5167
 - (d) None of these
97. 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 [$Z = .70$ $P = 2580$]
- (a) 494
 - (b) 414
 - (c) 521
 - (d) none of these
98. 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 ($z = 1.29$ at 0.40)
- (a) 25900
 - (b) 33750
 - (c) 26230
 - (d) none of these
99. In a certain code, "Delhi is capital" is coded as "7 5 9", "capital are beautiful" is coded as "3 6 9", "Delhi is beautiful" is coded as "6 7 5", "Patna also capital" is coded as "9 2 4". What is code for "beautiful" ?
- (a) 2
 - (b) 4
 - (c) 6
 - (d) 9
100. Which of the following is not an example of continuous variable?
- (a) Temperature in India
 - (b) Profit of Company X
 - (c) Number of road accidents
 - (d) A person's height

SPACE FOR ROUGH WORK