

M.K.G CA EDUCATION

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TEST - 7

CA FOUNDATION

QUESTION BOOKLET CODE: MKG

QUESTION PAPER BOOKLET NO. 7112021

(07.11.2021 3:00 p.m. to 5:00 p.m.)

Business Mathematics and Logical Reasoning & Statistics

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. Find fortnightly installment if a loan of ₹ 35 lakh is repayable in 6 years @ 9% p.a.
 - (a) Rs 40700
 - (b) Rs 31,500
 - (c) Rs36.900
 - (d) None of these
 2. Find issue price of 12% Bond of ₹ 1000, redeemed after 9 years at 8% premium if market Rate is 15% p.a.
 - (a) Rs 880
 - (b) Rs 910
 - (c) Rs 930
 - (d) None of these
 3. An amount of Rs 34 lakh was given to 2 persons @ 12% pa and @ 15% pa on simple interest if total interest after 2 years received is Rs 9,52,000. Find higher amount lent.
 - (a) Rs 11.33,333
 - (b) Rs 22,66,667
 - (c) Rs 23.87.667
 - (d) None of these
 4. If a building is purchased on EMI Of Rs 40,000 @ 9% p.a. for 10 years and after that Rs 60,000 quarterly for next 6 years .
 - (a) Rs 42,61,010
 - (b) Rs 31,57,667

- (c) Rs 47.89.987
(d) None of these
5. In a normally distribution labour intensive units with 30,000 workers 5% draw more than 50,000 and 5% of workers draw less than 15,000 find C/V($Z=1.65@45\%$)
(a) 28.98%
(b) 24.67%
(c) 32.63%
(d) None of these
6. In a Poisson distribution $3P(x = 4) = 6P(x = 5)$ find 4th moment
(a) 18.75
(b) 16.90
(c) 17.60
(d) None of these
7. In a symmetrical Binomial Distribution with 324 trials, the 4th moment is
(a) 14578
(b) 18676
(c) 19683
(d) None of these
8. If the value of money is reduced to 41% find D/A to be given
(a) 143.90%
(b) 43.90 %
(c) 69.49%
(d) None of these
9. If CPI is increased FROM 270 to 980 and Minimum wages is increased from 13,000. To 41000. The D/A required to be paid is
(a) not required
(b) Rs 5,876
(c) Rs 6,185
(d) None of these
10. White computing co-efficient of r of 16 items the PE is computed as 0.016, find whether co relation is
(a) significant
(b) non significant
(c) non associative
(d) None of these
11. If $r_{xy} = .70$ and X and U are related to $3x + 4u - 7 = 0$ and Y and V are related to $4y - 6v + 9 = 0$ the co relation in U and V is
(a) .70
(b) -.70
(c) .89
(d) None of these
12. A person has 5 children but he can take only 2 along with him in movies. In how many ways he can manage, if the same children can't always go to movie
(a) 5

- (b) 10
- (c) 4
- (d) None of these

13. If α and β are the roots of equation $3x^2 + 9x - 12 = 0$ the value of $\alpha^2 - \beta^2$

- (a) 15
- (b) -15
- (c) ± 15
- (d) None of these

14. Solve for x if $\left| \frac{3x-9}{4} \right| \leq 9$

- (a) $x < 15$
- (b) $x = 15$
- (c) $x > 15$
- (d) None of these

15. If a^2, b^2, c^2 are in AP find the value of $\frac{a}{b+c} + \frac{b}{c+a} + \frac{c}{a+b}$ is

- (a) $\frac{15}{8}$
- (b) $\frac{14}{9}$
- (c) $\frac{16}{8}$
- (d) None of these

16. If the word G O U R M E T is written in different ways find Probability no two vowels are together

- (a) $\frac{2}{7}$
- (b) $\frac{5}{7}$
- (c) $\frac{3}{7}$
- (d) None of these

17. If the word "F A S T I D I O U S" is written in different ways find probability vowels and consonants are written alternatively.

- (a) $\frac{1}{126}$
- (b) $\frac{1}{252}$
- (c) $\frac{1}{504}$
- (d) None of these

18. $f(x) = x^3 \{x \rightarrow n, n \leq 4\}$ find the function

- (a) one to one into
- (b) many to one onto
- (c) one to one onto
- (d) none of these

19. If the word COMMERCE is written in different ways find probability 4 letters are written in between both the Ms

(a) $\frac{3}{28}$

(b) $\frac{5}{28}$

(c) $\frac{6}{28}$

(d) None of these

20. $\int_0^9 \frac{\sqrt{9-x}}{\sqrt{x}+\sqrt{9-x}} dx$

(a) 4.50

(b) 9.50

(c) 19.50

(d) None of these

21. The cost function of a company is given by:

$$C(x) = 100x - 8x^2 + \frac{x^3}{3}, \text{ the output at which marginal cost is minimum}$$

(a) 18 units

(b) 10 units

(c) 8 units

(d) None of these

22. In a group of 1000 people in international conference there are 290 Indian Women and 230 Indian Men .

Out of Indians 40 are doctors and 240 are either men or doctors find total lady doctors if no foreign doctor is there.

(a) 30

(b) 20

(c) 10

(d) None of these

23. Beg I $\begin{bmatrix} \text{Red} & \text{Blue} \\ 4 & 6 \end{bmatrix}$

Beg II $\begin{bmatrix} 3 & 7 \end{bmatrix}$

Beg III $\begin{bmatrix} 5 & 5 \end{bmatrix}$

A ball is selected and found Blue find Probability it is selected from beg II

(a) $\frac{7}{18}$

(b) $\frac{5}{18}$

(c) $\frac{11}{18}$

(d) None of these

24. If The word AMBIGUITY Is written in different ways find probability vowels occupy only even places

a) $\frac{1}{126}$

b) $\frac{2}{126}$

c) $\frac{7}{126}$

d) None of these

25. Price index computed by Fishers is 203% while by Pasche it is 198% the CPI computed by Dr Bowley is

a) 205%

b) 203%

c) 207%

d) None of these

26. Year:	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
FBI:	100	140	190	250	320	400	500	660	800	1000

In which year inflation is highest

(a) 2012

(b) 2013

(c) 2014

(d) None of these

27. 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

28. 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

29. Find Present Value of advance annuity of ₹ 15000 per month for next 4 yeras @ 9%p.a be if started from immediate effect.

(a) Rs 6.07,293

(b) Rs 5,92,293

(c) Rs 5.77,293

(d) None of these

30. An amount becomes double in 6 years if compounded semi-annually. How long it will take in becoming the amount triple if compounded monthly.

(a) 8 years 5 months

(b) 9 years 3 months

(c) 9 years 5 months

(d) None of these

31. The effective rate of interest is @ 19.75% p.a. if compounded fortnightly, the nominal rate of interest will be

(a) 18%

(b) 24%

(c) 27%

(d) None of these

32. The variance of Y is computed as 64 and co efficient of correlation between x and y is 0.40 the standard error of estimate of Y ON X is

a) 7.42

b) 6.87

c) 8.65

- d) None of these
33. 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
- (a) 33.33%
 (b) 27.89%
 (c) 32.76%
 (d) None of these
34. ${}^{(m+n)}P_4 = 840$ and ${}^{(m-n)}P_4 = 120$ find m
- (a) 6
 (b) 7
 (c) 8
 (d) None of these
35. $\frac{20^n + 5^n}{20^{n-1} + 5^{n-1}} = 10$ is GP find (n+3)
- (a) -1/2
 (b) 1/2
 (c) 5/2
 (d) None of these
36. In two Arithmetic progressions if ratio of nth term is $(2n + 7) : (5n - 9)$ the ratio of sum of 200 terms is
- (a) 987:208
 (b) 208:987
 (c) 52:242
 (d) None of these
37. In an AP if $pT_p = qT_q$ the T_r terms is
- a) $p+q-r$
 b) $p-q+r$
 c) $p-q-r$
 d) none of these
38. Find value $(729), (729)^{\frac{1}{7}}, (729)^{\frac{1}{49}}, (729)^{\frac{1}{729}} \dots \dots \dots S_\infty$
- a) 2187
 (b) 729
 (c) 6561
 (d) None of these
39. $1 + \frac{6}{4} + \frac{11}{16} + \frac{16}{64} + \frac{21}{256} + \dots \dots \dots S_\infty$
- (a) 32/9
 (b) 21/9
 (c) 23/9
 (d) None of these
40. An amount becomes Rs18700 in 2 years and Rs 21,700 in 3 years if on simple interest find r
- (a) 12.28%
 (b) 11.19%
 (c) 19.11%
 (d) None of these

41. If α & β are the roots of equation $4x^2 - 16x + 24 = 0$ the value of $3\alpha^3 + 4\alpha^2 + 5\alpha + 3\beta^3 + 4\beta^2 + 5\beta$ is
- 12
 - 18
 - 24
 - None of these
42. 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
43. 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
44. If ALUMINUS: is coded as ULAIMSUN and HUMANNITY is coded as MUHNNAYTI then How the word COURTESY shall be coded
- UOVTREYS
 - UOVRTYES
 - UOCTRYSE
 - None of these
45. Find the missing value 1, 2, 10, 37, 101, 226.....
- 353
 - 412
 - 442
 - None of these
46. Find the missing value 1, 14, 39, 80, 151
- 212
 - 312
 - 207
 - None of these
47. Find the missing value 2, 20, 90, 272
- 432
 - 525
 - 650
 - None of these
48. Find the missing value 2, 24, 108, 320
- 750
 - 789
 - 830
 - None of these

49. Find the missing value 0, 15, 80, 255, 624
- 1295
 - 1480
 - 1165
 - None of these
50. Find the missing value 0, 6, 24, 60, 120
- 210
 - 220
 - 250
 - None of these
51. $3x + 9y - 15 = 0$ and $4x + 24y + 30 = 0$ find coefficient of alienation
- .49
 - .50
 - .71
 - None of these
52. 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
53. Find sum of all 4-digit numbers formed with 0, 4, 5, 7,
- 1,03,104
 - 1.06.654
 - 1,03,352
 - None of these
54. Find sum of all 5 digit numbers formed with 3 3 3 5 6
- 8,88,880
 - 7.78.899
 - 6,76,980
 - None of these
55. A 4 digit number is formed with 1, 3, 4, 5, 7, 9 find probability number formed lies between 4300 and 7500
- $\frac{2}{5}$
 - $\frac{3}{5}$
 - $\frac{1}{5}$
 - None of these
56. 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.
- 61650
 - 60240

- (c) incomplete data
(d) None of these
57. 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
58. 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
59. If $\log_a 4 = \frac{7}{2}$ find a
(a) 1.49
(b) 1.29
(c) 1.19
(d) None of these
60. 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
61. If 10 is added to all the observations C/V become 10%. If 10 is deducted from all the observation C/V becomes 36% find C/V if 5 is added to all the observation.
(a) 12.20%
(b) 14.89%
(c) 15.04%
(d) None of these
62. 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
63. If the word COMBINATION is written in different ways find Probability all vowels are not written in the starting of ward
(a) $\frac{1}{462}$
(b) $\frac{461}{462}$
(c) $\frac{3}{462}$
(d) None of these

64. The Cost of producing 400 item is 2300 and cost of producing 900 item is 3800 ,the cost of producing 1500 items is
 (a) 4580
 (b) 5160
 (c) 5740
 (d) None of these
65. 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 ($z = 1.04$ at 35% Probability)
 (a) 13,760
 (b) 26,240
 (c) 20,000
 (d) None of these
66. If 4th central moment in poison distribution is computed as 243 the C/V is computed as
 (a) 33.33 %
 (b) 52.17%
 (c) 46.80%
 (d) None of these
67. 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
 (a) Rs 33,16,820
 (b) Rs 31,90,870
 (c) Rs 11,57,900
 (d) None of these
68. X and Y are independent normal variable with mean 100 and 80 and SD are 4 & 3 respectively find probability distribution of (X and Y)
 (a) 180 and 25
 (b) 180 and 5
 (c) 180 and 7
 (d) None of these
69. If $f(x) = \frac{1}{1-x}$ the inverse of f(x) is
 a) $\frac{(x-1)}{x}$
 b) $\frac{x}{x-1}$
 c) $\frac{-x}{1-x}$
 d) none of these
70. 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
 (a) 342
 (b) 1368
 (c) 684
 (d) None of these

71. If the word PLAGIARISM is written in different ways, probability the place of vowel and place of consonants will remain the same

- (a) $\frac{1}{210}$
- (b) $\frac{2}{105}$
- (c) $\frac{3}{70}$
- (d) None of these

72.

	Red	Blue
Bag I	6	7
Bag II	4	9
Bag III	8	15

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

- (a) $\frac{52}{135}$
- (b) $\frac{57}{135}$
- (c) $\frac{63}{135}$
- (d) None of these

73. 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

- (a) 10.84%
- (b) 40.84%
- (c) 20.84 %
- (d) None of these

74. While computing Coefficient of Co-relation between the 2 variables of 10 items is computed as .70 while the difference is 2 rank is wrongly taken as 7 instead of 6. If r is computed as .70 the actual Co-efficient of Co-relation is

- (a) .78
- (b) .22
- (c) .63
- (d) None of these

75. What is the **Bijective** function

- (a) One to one onto
- (b) One to one into
- (c) Many to one onto
- (d) None of these

76. Surjective function is

- (a) One to one into
- (b) Many to one into
- (c) Any onto function
- (d) None of these

77. If a packet containing dozen of glasses is dropped which of the following can not be ratio of broken glasses to the unbroken glasses
- (a) 3:1
 - (b) 6:1
 - (c) 4:2
 - (d) None of these
78. 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
- (a) 0
 - (b) 1
 - (c) 2
 - (d) None of these

On the basis of following statement compute Questions 80 to 84

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.

79. The direction of G with Respect to A is
- (a) south east
 - (b) north east
 - (c) south west
 - (d) None of these
80. If Point J is the intersection in A, B and E, D which of the following is true
- (a) H is to the north of J
 - (b) $JE + JD = (GF - 6)$
 - (c) J is to the south of D
 - (d) None of these
81. Total distance travelled by Sumit in the west side
- (a) 65 km
 - (b) 64 km
 - (c) 54 km
 - (d) None of these
82. What is the direction of Point C with respect to H
- (a) north west
 - (b) east
 - (c) north east
 - (d) None of these
83. The direction of F from C is
- (a) South East
 - (b) South West
 - (c) South

(d) None of these

From the statement given below answer Question 85 to 89

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.

84. In which position A is sitting

- (a) Between B and D
- (b) Between B and C
- (c) Between D and E
- (d) None of these

85. Who is sitting in the middle of row

- (a) A
- (b) B
- (c) C
- (d) None of these

86. How many students are sitting in the right of B

- (a) 3
- (b) 1
- (c) 2
- (d) None of these

87. Who are sitting in the extreme of two sides

- (a) E & C
- (b) E & D
- (c) E & A
- (d) None of these

88. Who is sitting between A and D

- (a) C
- (b) B
- (c) E
- (d) None of these

89. Find the missing 5, 7, 21, 55, ?, 215

- (a) 117
- (b) 109
- (c) 114
- (d) None of these

90. A theoretical probability distribution.

- (a) does not exist
- (b) Exists only in theory
- (c) exists in real life
- (d) both (b) and (c)

91. 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
92. Reaction in some medicine follow
- Normal Distribution
 - Poisson's Distribution
 - Binomial Distribution
 - None of these
93. The regression coefficients are zero if r is equal to
- 0
 - 1
 - 1
 - None of these
94. The circular test is an extension of
- The Factor Reversal Test
 - The Time Reversal Test
 - The Unit Test
 - None of these
95. Group index number is represented by
- $\frac{\text{Price Relative for the year}}{\text{Price Relative for the previous year}} \times 100$
 - $\frac{\sum(\text{Price Relatice} \times w)}{\sum w}$
 - $\frac{\sum(\text{Price Relatice} \times w)}{\sum w} \times 100$
 - None of these
96. _____ cannot be treated algebraically
- Mode
 - Mean
 - Median
 - None of these
97. Coefficient of variation is a relative measure of
- Dispersion
 - Range
 - Deviation
 - None of these
98. Computation of deviation is
- Relative comparison
 - Absolute Comparison
 - Both (a) and (b)
 - None of these

99. An Ogive curve can be prepared in _____ different ways

- (a) 2
- (b) 3
- (c) 4
- (d) None of these

100. The horizontal Bar graph is used for

- a) comparing the attributes
- b) comparing the variables
- c) Finding relation in 2 variables
- d) none of these