

M.K.G CA EDUCATION

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TEST – 6

QUESTION BOOKLET CODE: MKG

QUESTION PAPER BOOKLET NO. 6102021

CA FOUNDATION

(03-10-2021 3:00 p.m. to 5:00 p.m.)

Business Mathematics and Logical Reasoning & Statistics

CHAPTERS

1. Full Syllabus

Time allowed: 2 hours

Maximum Marks: 100

Instructions:

1. Answer to be given in OMR sheet
2. Negative marking applies

01. The 4-digit numbers are formed with 3, 4, 5 & 6 the probability number formed would not be divisible by 5.

a) $\frac{1}{4}$

b) $\frac{3}{4}$

c) $\frac{1}{16}$

d) none of these

02. If the word AMBIGUITY is written in different ways the probability no two vowels are together is

a) $\frac{5}{42}$

b) $\frac{3}{42}$

c) $\frac{9}{42}$

d) none of these

03. There are two bags no 1 containing 4 red and 5 white balls and no 2 containing 3 red and 6 white balls A pair of dice is thrown if gets doublet ball would be drawn from bag 1 otherwise from bag 2 the probability that red ball is drawn is

a) $\frac{19}{54}$

- b) $\frac{35}{54}$
 c) $\frac{16}{54}$
 d) none of these
04. In a probability distribution if Mean and variance are computed as 12 and 3 the fourth moment is
 a) 17
 b) 4
 c) 27
 d) none of these
05. If b_{xy} is computed as 3.45 and $3x + 4u - 9 = 0$ and $5y + 7v + 8 = 0$ find the value of b_{uv}
 a) 3.62
 b) 2.66
 c) -3.62
 d) none of these
06. Find Bi monthly installment if Rs 54 lacs is repayable in 9 years @ 9% pa
 a) Rs 1,46,617
 b) Rs 1,76,567
 c) Rs 1,89,876
 e) none of these
07. The issue price of 9% bond of ₹ 500 redeemable after 7 years at 10% premium if opportunity cost is @ 12%
 a) Rs 432
 b) Rs 476
 c) Rs 454
 d) none of these
08. The ratio of principal and the compound interest value for three years (compounded annually) is 216:127 The rate of interest is:
 (a) 0.1567
 (b) 0.1777
 (c) 0.1667
 (d) 0.1588
09. Find nominal rate of interest if effective rate is 15% compounded monthly
 a) 13.90%
 b) 14.50%
 c) 14.04%
 d) none of these
10. If the word EXTORTION is written in different ways find Probability vowels occupy even places
 a) $\frac{1}{14}$
 b) $\frac{1}{63}$
 c) $\frac{1}{126}$
 d) none of these
11. If regression co efficient x on y is computed as 1.90 and determination co efficient is 49% compute regression co efficient y on x
 a) .29

- b) .26
c) .34
d) none of these
12. In a manufacturing unit if 1.50 % items are defected find probability at least one item is defective out of 300 items
a) .011
b) .990
c) .898
d) none of these
13. If 6 boys and 5 girls are made to sit in a circle find Probability all the girls are not together
a) $\frac{41}{42}$
b) $\frac{6}{11}$
c) $\frac{1}{42}$
d) none of these
14. An amount becomes 4 times at simple interest in just 30 years find how much time it takes in becoming 7 times
a) 60 years
b) 45 years
c) 72 years
d) none of these
15. A and B stand in a queue with 6 more persons find probability exactly 3 persons are between A and B in the queue
a) $\frac{1}{11}$
b) $\frac{1}{9}$
c) $\frac{1}{7}$
d) none of these
16. In a symmetrical Binomial Distribution with 400 trials the C/V shall be
a) 6.25%
b) 7.50%
c) 5%
d) none of these
17. Compute combined standard deviation from the following data
- | | A | B |
|--------------------|----------|----------|
| Students | 150 | 250 |
| Mean | 60 | 76 |
| Standard deviation | 12 | 9 |
- a) 21.67
b) 18.70
c) 12.83
d) none of these
18. Find issue price of 11% Bond of ₹ 800 redeemable after 8 years at a premium of 12% if opportunity cost is @ 14%
a) 732.90

- b) 689.80
 c) 722.30
 d) none of these
19. in and AP if 8th term is 15 find the sum first 15 terms
 a) 450
 b) 540
 c) 390
 d) None of these
20. The company had declared dividend @ 50 per shares 4 years back with a growth of 8% if cost of equity is 20% find Market price of share is
 a) Rs 705
 b) Rs 567
 c) Rs 604.
 d) none of these
21. Find PV of an annuity of ₹ 10,000 pm for 61 months receivable on advance basis @ 9% pa
 a) 471733
 b) 481733
 c) 491733
 d) none of these
22. If 12 is added to all the observations the C/V becomes 15% and it becomes 30% if 12 is deducted from all the observation. The present C/V is
 a) 20%
 b) 18%
 c) 24%
 d) none of these
23. An amount of Rs 45 lacs repayable after 9 years @ 11% compounded quarterly is preponed to 5 years the amount repayable shall be
 a) 2346651
 b) 3152096
 c) 2746216
 d) none of these
24. An amount of Rs 50 lacs is lent to 3 persons A B and C for 6 years 7 years and 9 years respectively @ 10% p.a. Compounded annually if all repay the equal amount find the amount lent to B.
 a) 1708730
 b) 1981132
 c) 1789655
 d) none of these
25. If X and Y are related to $4x + 5y - 9 = 0$ and MD_X is 8 compute $Variance_{(5y-7)}$
 a) 40
 b) 320
 c) 1600
 d) none of the above
26. Repayment of loan is
 a) Loan \times discounting factor
 b) Loan \times compounding factor
 c) loan \div discounting factor

- d) none of these
27. Future Value of annuity is
- Periodical investment \times compounding factor
 - Periodical investment \times discounting factor
 - Periodical Investment \div compounding factor
 - none of these
28. The Price Index computed by Dr Bowley method is 112 % and by Fishers method it is 123% Compute Price Index by Pasche's method
- 128%
 - 116%
 - data incorrect
 - none of these
29. If b_{xy} is computed as 1.78 and $3x - 5u - 9 = 0$ and $5y + 7v + 4 = 0$ compute b_{uv}
- 1.50
 - 1.50
 - 2.76
 - none of these
30. If r_{xy} is computed as .78 the value of r_{3x2y} is
- .59
 - .78
 - .26
 - none of these
31. Which of the following is Uni - Modal distribution?
- Binomial
 - Poisson
 - Normal Distribution
 - none of these
32. In Normal distribution $(\mu - 3\sigma)$ covers approximately
- .4987
 - .9974
 - .4772
 - none of the above
33. A house was purchased by paying Rs 4,00,000 as down payment and 84 EMIs of Rs 23,000 each if opportunity cost is 9%pa what is the cost price of house.
- 14,29,540
 - 18,29,540
 - 10,29,540
 - none of these
34. The plant costing Rs 76,00,000 was purchased 9 years back and was depreciated on diminishing balance method If the wdv of plant is Rs 34,89,000 the average rate of depreciation is
- 8.10%
 - 9.67%
 - 8.29%
 - none of these
35. The salvage value of plant is Rs 23,00,000 which was purchased for Rs 54,00,000 and was depreciated @ 15% what is the age of plant

- a) 5 years 7 months
 b) 5 years 3 months
 c) 5 years 9 months
 d) none of these
- 36.** An amount becomes double in 6 years if compounded annually after how long it will become 16 times at the same rate of interest
 a) 18 years
 b) 24 years
 c) 21 years
 d) none of these
- 37.** The difference in simple interest and compound interest Compounded qrtly for 5 years @ 11% pa is Rs 4,89,000 the amount of investment is
 a) 2869276
 b) 362095
 c) 2897565
 d) none of these
- 38.** A 4-digit number is formed with 2 3 4 6 8 and 9 the probability number will be between 3400 and 6200
 a) $\frac{2}{10}$
 b) $\frac{4}{12}$
 c) $\frac{3}{10}$
- 39.** If the word ANNUITY is written in different ways find probability all the vowels and all the consonants are not together
 a) $\frac{2}{35}$
 b) $\frac{33}{35}$
 c) $\frac{5}{42}$
 d) none of these
- 40.** How many code words are possible with three distinct alphabets followed by 4 digits between 1 to 9
 a) 47174400
 b) 36789670
 c) 36,28,800
 d) none of these
- 41.** If the word COMPUTERS is written in different ways find Probability word start with C and end with S
 a) $\frac{1}{48}$
 b) $\frac{1}{56}$
 c) $\frac{1}{72}$
 d) none of these
- 42.** If $P \times Q$ means P is brother of Q
 $P * Q$ means P is mother of Q
 $P - Q$ means P is father of Q

P + Q means P is sister of Q

How K is related to R if R * T + K

- a) Daughter
- b) Sister
- c) Niece
- d) none of these

43. Find odd one out 1, 5, 14, 30, 51, 55, 91

- a) 51
- b) 55
- c) 30
- d) none of these

44. Find EQI if a loan of ₹ 50 lacs is required to be repaid in 8 years @ 10% p.a.

- a) Rs 228841,
- b) Rs2,03,842
- c) Rs 2.89.786
- d) none of these

45. If 4 digit number is formed with 3 4 5 6 7 and 9 find Probability number will be divisible by 4

- a) $\frac{1}{3}$
- b) $\frac{2}{3}$
- c) $\frac{1}{24}$
- d) none of these

46. Odds in favour of A hitting the target is 3:7 and odds against B hitting the same is 4:9 if both try independently find odds in favour of least target will be hit

- a) 51: 12
- b) 51: 14
- c) 102 : 160
- d) none of these

47. Find probability of getting a doublet if it is known that a total of at least 9 has appeared.

- a) 32%
- b) 26%
- c) 20%
- d) none of these

48. Complete the series

1, 8, 81, 1024, 15625?

- (a) 279936
- (b) 298675
- (c) 117249
- (d) none of these

49. Find ratio of the Standard Deviation in X and Y

X: 101 102 103 104 -----150

Y: 201 202 203 204 -----250

- a) 1:1
- b) 2:5
- c) 3:4

- d) none of these
50. find the missing 7, 26, 124, 342, 1330, 2196, -----
(a) 4912
(b) 3374
(c) 6858
(d) none of these
51. Find the missing 1, 16, 81, 256, 625, 1296 -----
(a) 2401
(b) 4096
(c) 6561
(d) none of these
52. find missing 2, 12, 36, 80, 150, 252 -----
(a) 392
(b) 576
(c) 810
(d) none of these
53. find the odd one 64, 216, 512, 729, 1331, 3371, 8000
(a) 8,000
(b) 3371
(c) 64
(d) none of these
54. If REASON is coded as 5 BELIEVED is coded as 7 How the GOVERNMENT is coded
(a) 6
(b) 8
(c) 9
(d) none of these
55. complete the series 1, 4, 27, 256, 3125, -----
(a) 46656
(b) 18750
(c) 15625
(d) none of these
56. Ram started from point X and walked straight 5 kms west then turned left and walked 2 kms straight and again turned left and walked straight 7 kms, in which direction is he from point X
(a) North East
(b) South west
(c) South east
(d) north west
57. Anoop starts walking towards south after walking 15 meter he turns towards North reaches at a crossing after 30 meters he turns towards east and walks 10 meters. He then turns towards south and walks 5 meters. In which direction is he from the original position
(a) East
(b) South
(c) North
(d) west

58. Six persons A B C D E and F are seen in a group B is brother of D but D is not brother of B F is brother of B, C and A are married together. F is son of C but C is not mother of F. E is brother of A. The number of female members are
- 1
 - 2
 - 3
 - 4
59. Six flats are on a floor in two rows facing North and South are allotted to P Q R S T and U. If Q gets a North facing flat not next to S.S and U get diagonally opposite flats. R next to U gets South facing flat while T gets north facing flat. Who has flat between Q and S.
- t
 - r
 - u
 - none of these
60. Ram and Mohan are brothers, Shankar is Mohan's father. Chhaya is Shankar's sister. Priya is Shankar's niece. Shubhra is Chhaya's grand-daughter then Ram is Shubhra's
- Brother
 - Uncle
 - Cousin
 - Nephew
61. Find missing 28, 32, 23, 39, 14
- 30
 - 50
 - 55
 - None of these
62. Find missing 13, 13, 65, 585, 7605, 129285?
- 24566415
 - 2235675
 - 2980565
 - None of these
63. Find missing 1, 8, 81, 1024, 15625
- 279936
 - 343789
 - 456864
 - None of these
64. The consumer price Index is increased from 130 to 970 from 1995 to 2015 while minimum wages is increased from Rs 7000 to Rs 43000. the real wages is
- Increased
 - decreased
 - no change
 - none of these
65. The co efficient of variation of first 250 Natural numbers is
- 57%
 - 57.50%
 - 58%
 - none of these

66. The value of money is reduced to 34.92% The CPI is
- 236.39 %
 - 286.36%
 - 134.92%
 - none of these
67. In a normally distributed factory of 10000 workers with average salary of Rs 32000 if 25 % workers draw less than 27500 The range of salary is
- 13343
 - 36678
 - 26688
 - none of these
68. In a normally distributed factory with 8000 workers if two quartiles are computed as 16000 and 24,000 the range deviation will be
- 11861
 - 60,000
 - 30,000
 - none of these
69. If X and y are related to $3X + 4Y - 6 = 0$ the relation between X and y is
- Linear Positive
 - Linear Negative
 - High Degree Positive Relation
 - None of these
70. If $P(A) = p$ and $P(B) = q$ the
- $P(A/B) > p/q$
 - $P(A/B) < p/q$
 - $P(A/B) = p/q$
 - (b) and (c) both
71. If the observations are given in ratio which of the following central value is best
- AM
 - GM
 - HM
 - none of these
72. If Q.D of 40 observations is computed as 20 and Median is computed as 32 the co efficient of Quartile deviation is:
- $\frac{20}{32}$
 - $\frac{15}{32}$
 - $\frac{25}{32}$
 - None of these
73. If the two regression lines are $2x - 8y + 6 = 0$ and $3x - 4y - 9 = 0$ the co efficient of co relation is
- .57
 - .57
 - .44
 - None of these

74. A and B throw a pair of dice alternatively till the doublet appears. If A starts the game, find the probability of B losing the game.
- (a) $\frac{6}{11}$
 (b) $\frac{5}{11}$
 (c) $\frac{5}{36}$
 (d) none of these
75. While computing the covariance of 10 pairs, a pair (8, 6) is wrongly taken as (6, 8) if the computed mean of X, Y and covariance between them are 40, 50 and 60 respectively. The correct covariance (x and y) is
- (a) 60
 (b) 56.76
 (c) 58.04
 (d) none of these
76. The regression coefficient remains independent with change in _____ but gets affected with change ____.
- a) Origin and scale
 b) Scale and origin
 c) No effect with change in both
 d) None of these
77. If the standard deviation of x is computed as b, the variance of $\left(\frac{x+a}{b}\right)$ is
- (a) 1
 (b) $\frac{a}{b}$
 (c) b
 (d) none of these
78. The column heading of a table is called
- (a) Stub
 (b) Caption
 (c) Body
 (d) Box Head
79. An experiment succeeds twice as often as it fails. What is the probability that out of 5 trials, in a majority of the cases it will succeed.
- a) $\frac{33}{81}$
 b) $\frac{46}{81}$
 c) $\frac{64}{81}$
 d) $\frac{25}{81}$
80. In a normal distribution with parameters (50 and 16) which is not true
- a) $p(x > 60) = .30$
 b) $p(x < 50) = .50$
 c) $p(x < 60) = .40$
 d) $p(x > 50) = .50$

81. Consumer price index number for the year 1977 was 313 with 1960 as base year and was 96 for the year 1960. The average monthly wages in 1977 of the workers into factory be 160 their real wages is
- Rs 48.40
 - Rs 51.12
 - Rs 40.30
 - none of these
82. The mean of normal distribution is 50 and 5 % of the values are greater than 60 the value of c/v is ($z = 1.64$ is 0.45)
- 12.18%
 - 18.12%
 - 16.72%
 - none of these
83. In a Binomial Distribution with 6 trials the probability of 3 and 4 successes is found to be .2457 and .0819 respectively the value of P is
- $\frac{2}{13}$
 - $\frac{4}{13}$
 - $\frac{5}{13}$
 - none of these
84. A B C are three brothers. D the son of A is married to E who has a son G. H son of B is married to J and blessed with a daughter K. C has a daughter T who is married to P and blessed with a daughter R. How is K related to B.
- Grand Daughter
 - Grand Son
 - Sister
 - None of these
85. If $\frac{9^y 3^{2(3^{-y})^{-1}} - 27^y}{3^{3x} \cdot 2^3} = \frac{1}{27}$ then the value $(x - y)$ is
- 1
 - 0
 - 1
 - None of these
86. Show that $\left(x^{\frac{b+c}{c-a}}\right)^{\frac{1}{a-b}} \times \left(x^{\frac{c+a}{a-b}}\right)^{\frac{1}{b-c}} \times \left(x^{\frac{a+b}{b-c}}\right)^{\frac{1}{c-a}}$ reduces to
- 1
 - 3
 - 1
 - None of these
87. The value of $4 \log \frac{8}{25} - 3 \log \frac{16}{125} - \log 5$ is
- 0
 - 1
 - 2
 - None of the these
88. If data is given in ratios which is the most suitable method of computing average
- AM

- b) GM
c) HM
d) None of these
89. Sum of n terms of two APs are in the ratio of $(7n - 5) : (5n + 17)$. Then which of the term of APs are equal to each other
a) 12
b) 6
c) 3
d) None of these
90. If S be the sum p be the product and R be the sum of reciprocals of n terms in GP then p^2R^n is equal to
a) s^{2n}
b) S^n
c) S^{-2n}
d) None of these
91. a^2, b^2, c^2 are in AP then $\frac{a}{(b+c)} + \frac{b}{(c+a)} + \frac{c}{(a+b)}$ is equal to
a) $\frac{24}{45}$
b) $\frac{45}{24}$
c) $\frac{1}{12}$
d) None of these
92. Evaluate $\int_1^2 \left[\frac{x^2-1}{x^2} \right] e^{x+\frac{1}{x}} dx$
a) $e^2 (\sqrt{e} - 1)$
b) $e^2 (\sqrt{e} - 1)$
c) $e^2 \sqrt{e}$
d) None of these
93. If set $A = \{1, 2, 3, 4\}$ the cardinal factor of power set A is
a) 2^4
b) 2^8
c) 2^{16}
d) None of these
94. $f(x) = x^2, x \rightarrow N, N \leq 4$, function is
a) One to one onto
b) One to one into
c) Many to one onto
d) It is not a function
95. If $\frac{10^{n+1} + 40^{n+1}}{10^n + 40^n} = 20$ the value of n is
a) -1
b) -1/2
c) 0
d) None of these
96. A loan of ₹ 50,00,000 repayable in 60 EMIs was reconstructed after making 15 payments to EQIs. If the rate of interest is @9% p.a. find the computer EQI
a) 3,37,430

- b) 3,13,324
 - c) 3,49,249
 - d) None of these
- 97.** A BAR CHART is drawn for
- a) Continuous data
 - b) Normal Data
 - c) Time series Data
 - d) comparing the components
- 98.** Modesty in a nice person and sweetness in sweet are examples of
- a) quantitative data
 - b) qualitative data
 - c) variable
 - d) attribute
- 99.** Data on Macro Economics is presented by
- a) Bar chart
 - b) Line Chart
 - c) Pie chart
 - d) frequency polygon
- 100.** The rates of return on three securities are 150% 200% and 240% the average profit is
- a) 193.42%
 - b) 196.67%
 - c) 199.87%
 - d) none of these

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