

M.K.G CA EDUCATION

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TEST-5

QUESTION BOOKLET CODE: MKG

QUESTION PAPER BOOKLET NO. 5032022

CA FOUNDATION

(20-03-2022 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. Statics cannot deal with _____ data.
 - (a) Quantitative
 - (b) Qualitative
 - (c) Textual
 - (d) undetailed
2. Sweetness of a sweet dish is:
 - (a) Attribute
 - (b) Discrete variable
 - (c) Continuous variable
 - (d) Variable
3. Census report are used as a source of _____ date.
 - (a) Secondary
 - (b) Primary
 - (c) Organize
 - (d) Confidential

4. Types of cumulative frequencies are:
- (a) 1
 - (b) 2
 - (c) 3
 - (d) 4
5. You are an auditor of a firm and the firm earn a profit of ₹ 67,000 you stated to them that the annual profit is ₹ 67,000. This is _____ type of statistics
- (a) Descriptive
 - (b) Detailed
 - (c) Non detailed
 - (d) inferential
6. The ____ are used usually when we want to examine the relationship between two variables.
- (a) Bar Graph
 - (b) Pie Chart
 - (c) Line Chart
 - (d) Scatter Plot
7. When data are classified according to one criterion, then it is called _____ classification
- (a) Quantitative
 - (b) Qualitative
 - (c) Simple
 - (d) factored
8. Given the weights for the numbers 1, 2, 3.....n are respectively $1^3, 2^3, 3^3, \dots, n^3$ then weighted HM is ____.
- (a) $\frac{3n(n+1)}{2(2n+1)}$
 - (b) $\frac{2n(n+1)}{3(2n+1)}$
 - (c) $\frac{2n(n+1)}{(2n+1)}$
 - (d) None of these
9. 50th Percentile is equal to
- (a) Median
 - (b) Mode
 - (c) Mean
 - (d) None of these

10. The harmonic mean A and B is $\frac{1}{3}$ and harmonic mean of C and D is $\frac{1}{5}$. The harmonic mean of ABCD is
- (a) $\frac{8}{15}$
 (b) $\frac{1}{4}$
 (c) $\frac{1}{15}$
 (d) $\frac{5}{3}$
11. 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
12. 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
13. 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
14. 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
15. 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
16. 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
 (d) none of these
17. Find the issue price of 9% bond of ₹ 500 redeemable after 7 years at 10% premium if opportunity cost is @ 12% p.a.
 (a) Rs 432
 (b) Rs 476
 (c) Rs 454
 (d) none of these
18. 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
19. 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
20. 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
21. 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
22. 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
23. 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
24. 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
25. 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
26. 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
27. 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
28. In an AP if 8th term is 15 find the sum first 15 terms
 (a) 450
 (b) 540
 (c) 390
 (d) None of these
29. 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
30. 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
31. 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
32. 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
33. 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
34. 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
35. Repayment of loan is
 (a) Loan \times discounting factor
 (b) Loan \times compounding factor
 (c) loan \div discounting factor
 (d) none of these
36. Future Value of annuity is
 (a) Periodical investment \times compounding factor
 (b) Periodical investment \times discounting factor
 (c) Periodical Investment \div compounding factor
 (d) none of these
37. The Price Index computed by Dr. Bowley Method is 112 % and by Fishers method it is 123% Compute Price Index by Paasche's method
 (a) 128%
 (b) 116%
 (c) data incorrect
 (d) none of these
38. If b_{xy} is computed as 1.78 and $3x - 5u - 9 = 0$ and $5y + 7v + 4 = 0$ compute b_{uv}
 (a) 1.50
 (b) -1.50
 (c) 2.76
 (d) none of these
39. If r_{xy} is computed as .78 the value of r_{3x2y} is
 (a) .59
 (b) .78
 (c) .26
 (d) none of these
40. Which of the following is Uni - Modal distribution?
 (a) Binomial

- (b) Poisson
(c) Normal Distribution
(d) none of these
41. In Normal distribution ($\mu - 3\sigma$) covers approximately
(a) .4987
(b) .9974
(c) .4772
(d) none of the above
42. 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.
(a) 14,29,540
(b) 18,29,540
(c) 10,29,540
(d) none of these
43. 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
(a) 8.10%
(b) 9.67%
(c) 8.29%
(d) none of these
44. 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
45. 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
46. 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) $\frac{3}{10}$
47. 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
48. 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

49. 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 QHow K is related to R if $R * T + K$

(a) Daughter

(b) Sister

(c) Niece

(d) none of these

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

(a) 51

(b) 55

(c) 30

(d) none of these

51. 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

52. 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

53. 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

54. 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

55. Complete the series

1, 8, 81, 1024, 15625?

(a) 279936

- (b) 298675
 (c) 117249
 (d) none of these
56. 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
57. Find the missing 7, 26, 124, 342, 1330, 2196, -----
 (a) 4912
 (b) 3374
 (c) 6858
 (d) none of these
58. Find the missing 1, 16, 81, 256, 625, 1296 -----
 (a) 2401
 (b) 4096
 (c) 6561
 (d) none of these
59. Find missing 2, 12, 36, 80, 150, 252 -----
 (a) 392
 (b) 576
 (c) 810
 (d) none of these
60. Find the odd one 64, 216, 512, 729, 1331, 3371, 8000
 (a) 8,000
 (b) 3371
 (c) 64
 (d) none of these
61. Complete the series 1, 4, 27, 256, 3125, -----
 (a) 46656
 (b) 18750
 (c) 15625
 (d) none of these
62. 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
63. 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
64. 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
(a) 1
(b) 2
(c) 3
(d) 4
65. 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.
(a) t
(b) r
(c) u
(d) none of these
66. 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
(a) Brother
(b) Uncle
(c) Cousin
(d) Nephew
67. Find missing 28, 32, 23, 39, 14
(a) 30
(b) 50
(c) 55
(d) None of these
68. Find missing 13, 13, 65, 585, 7605, 129285?
(a) 24566415
(b) 2235675
(c) 2980565
(d) None of these
69. Find missing 1, 8, 81, 1024, 15625
(a) 279936
(b) 343789
(c) 456864
(d) None of these
70. 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
(a) Increased
(b) decreased
(c) no change
(d) none of these
71. The co efficient of variation of first 250 Natural numbers is
(a) 57%

- (b) 57.50%
- (c) 58%
- (d) none of these
72. 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
- (a) 13343
- (b) 36678
- (c) 26688
- (d) none of these
73. If X and y are related to $3X + 4Y - 6 = 0$ the relation between X and y is
- (a) Linear Positive
- (b) Linear Negative
- (c) High Degree Positive Relation
- (d) None of these
74. If $P(A) = p$ and $P(B) = q$ the
- (a) $P(A/B) > p/q$
- (b) $P(A/B) < p/q$
- (c) $P(A/B) = p/q$
- (d) (b) and (c) both
75. If the observations are given in ratio which of the following central value is best
- (a) AM
- (b) GM
- (c) HM
- (d) none of these
76. If Q.D of 40 observations is computed as 20 and Median is computed as 32 the co efficient of Quartile deviation is:
- (a) $\frac{20}{32}$
- (b) $\frac{15}{32}$
- (c) $\frac{25}{32}$
- (d) None of these
77. A and B throw a pair of dice alternatively till the doublet appears If A starts the game find Probability of B loosing the game
- (a) $\frac{6}{11}$
- (b) $\frac{5}{11}$
- (c) $\frac{5}{36}$
- (d) none of these
78. The regression coefficient remains independent with change in _____ but gets affected with Change _____.
- (a) Origin and scale
- (b) Scale and origin
- (c) No affect with change in both
- (d) None of these

79. If Standard deviation of x is computed as b the variance of $\left(\frac{x+a}{b}\right)$ is
- 1
 - $\frac{a}{b}$
 - b
 - none of these
80. The column heading of table is called
- Stub
 - Caption
 - Body
 - Box Head
81. An experiment succeeds twice as often as it fails. What is the probability out of 5 trials in majority of the cases it will succeed.
- $\frac{33}{81}$
 - $\frac{46}{81}$
 - $\frac{64}{81}$
 - $\frac{25}{81}$
82. In a normal distribution with parameters (50 and 16) which is not true
- $p(x > 60) = .30$
 - $p(x < 50) = .50$
 - $p(x < 60) = .40$
 - $p(x > 50) = .50$
83. 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
84. 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
85. 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

86. 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.
- (a) Grand Daughter
 (b) Grand Son
 (c) Sister
 (d) None of these
87. 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
- (a) -1
 (b) 0
 (c) 1
 (d) None of these
88. 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
- (a) 1
 (b) 3
 (c) -1
 (d) None of these
89. The value of $4 \log \frac{8}{25} - 3 \log \frac{16}{125} - \log 5$ is
- (a) 0
 (b) 1
 (c) 2
 (d) None of these
90. 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
91. If S be the sum p be the product and R be the sum of reciprocals of n terms in GP then $p^2 R^n$ is equal to
- (a) s^{2n}
 (b) S^n
 (c) S^{-2n}
 (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. $f(x) = x^2$ $x \rightarrow \mathbb{N}$, $\mathbb{N} \leq 4$, 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 BAR CHART is drawn for
 (a) Continuous data
 (b) Normal Data
 (c) Time series Data
 (d) comparing the components
97. 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
98. $\int_0^9 \frac{\sqrt{9-x}}{\sqrt{x} + \sqrt{9-x}} dx$
 (a) 4.50
 (b) 9.50
 (c) 19.50
 (d) None of these
99. The cost function of a company is given by:
 $C(x) = 100x - 8x^2 + \frac{x^3}{3}$, the output at which marginal cost is minimum
 (a) 18 units
 (b) 10 units
 (c) 8 units
 (d) None of these
100. Beg I $\left[\begin{array}{cc} \text{Red} & \text{Blue} \\ 4 & 6 \end{array} \right]$
 Beg II $\left[\begin{array}{cc} 3 & 7 \end{array} \right]$
 Beg III $\left[\begin{array}{cc} 5 & 5 \end{array} \right]$
 A ball is selected and found Blue find Probability it is selected from beg II
 (a) 7/18
 (b) 5/18
 (c) 11/18
 (d) None of these

SPACE FOR ROUGH WORK

