M.K.G CA EDUCATION

9811429230 / 9212011367

WEBSITE : WWW.MKGEDUCATION.COM

EMAIL : MKCAEDUCATION@GMAIL.COM

Youtube channel: MKG CA EDUCATION

Facebook Page : https://www.facebook.com/mkgcaeducation/

Instagram : https://www.instagram.com/mkguptacaeducation/?hl=en

TEST - 1

QUESTION BOOKLET CODE: MKG

QUESTION PAPER BOOKLET NO. 1072022

ROLL NO. 354195

CA FOUNDATION

(03-07-2022 3:00 P.M. TO 5:00 P.M)

Business Mathematics and Logical Reasoning & Statistics

CHAPTERS

1. Sequence and Series

2. Permutation and Combination

Time allowed: 2 hours **Maximum Marks : 100**

Instructions:

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

---

1. Find sum of $1 + \frac{5}{4} + \frac{9}{16} + \frac{13}{64} +$ ---------- upto infinity

(a) $\frac{12}{7}$

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

(c) $\frac{28}{9}$

(d) None of these

2. Find the sum of 1.2 + 2.3 +3.4 + 4.5 +---------- upto n terms

(a) $\frac{1}{6}[n(n+1)(2n+4)]$

(b) $\frac{1}{6}[n(n+1)(2n-4)]$

(c) $\frac{1}{6}[n(n-1)(2n+4)]$

(d) None of these

3. The sum of first 20 terms in GP is 244 times of first ten terms find the value of r
(a) $\sqrt{3}$
(b) $\pm\sqrt{3}$
(c) $\pm\sqrt{2}$
(d) None of these

4. If first term second term and seventh term of AP are in GP and common difference is 2 the third term of series is
(a) 3
(b) 5
(c) 7
(d) None of these

5. If the word COMMERCE is written in different ways in how many ways all the vowels are together
(a) 540
(b) 520
(c) 600
(d) None of these

6. In how many ways 4 letters can be selected out of EXAMINATION
(a) 125
(b) 143
(c) 136
(d) None of these

7. How many factors can be made with 25600
(a) 33
(b) 38
(c) 47
(d) None of these

8. If 5 girls and 4 boys are made to sit in a circle in how many ways it is possible if all boys are not together
(a) 40320
(b) 33540
(c) 37440
(d) None of these

9. Find sum of all 4 digit numbers formed with 4 5 6 and 7
(a) 146652
(b) 162345
(c) 154784
(d) None of these

10. How many 4-digit numbers greater than 5000 can be formed by 2 4 5 7 and 8
(a) 88
(b) 108
(c) 72
(d) None of these

11. If the word EXTEMPORE is written in different ways in how many ways it is possible if no two vowels are together
(a) 7000
(b) 7200
(c) 7100
(d) None of these

12. Find sum of all 5-digit numbers formed with 2 3 5 6 and 7
(a) 61,33,272
(b) 55,20,000

(c) 60,52,220
(d) None of these

13. How many 4 digit even numbers can be formed with 0 6 8 9 and 5
(a) 72
(b) 60
(c) 80
(d) None of these

14. How many 4-digit numbers can be formed greater than 6500 with 4 5 6 7 and 9
(a) 124
(b) 104
(c) 96
(d) None of these

15. If the word GOOGLE is written in dictionary find the rank of the word dictionary
(a) 88
(b) 84
(c) 72
(d) None of these

16. If the word PROFESSION is written in different ways in how many ways it is possible if vowels occupy odd places
(a) 21600
(b) 33500
(c) 24700
(d) None of these

17. In how many ways at least 3 friends can be invited out of 10 friends.
(a) 1076
(b) 1024
(c) 968
(d) None of these

18. How many triangles can be formed with 12 points if 5 are collinear
(a) 210
(b) 220
(c) 230
(d) None of these

19. How many straight lines can be formed with 10 points if 5 are collinear?
(a) 35
(b) 37
(c) 36
(d) None of these

20. 5 persons are made to sit in a circle in how many ways it is possible if tallest person is always left to smallest person
(a) 48
(b) 24
(c) 6
(d) None of these

21. If the word PLAGIARISM is written in different ways in how many ways it is possible if word start with P and end with G
(a) 40320
(b) 10080
(c) 20160
(d) None of these

22. If ${}^{m+n}p_2 = 56$ and ${}^{m-n}p_2$ is 30 find the value of n
(a) 8

(b) 7
(c) 1
(d) None of these

23. ${}^{n}p_{r}$ =336 and ${}^{n}c_{r}$ =56 the value of r is
(a) 3
(b) 8
(c) 6
(d) None of these

24. Find sum of $\frac{1}{3.9}+\frac{1}{9.15}+\frac{1}{15.24}$ +----------n terms
(a) $\frac{1}{3(6n+3)}$
(b) $\frac{n}{3(6n+3)}$
(c) $\frac{n}{3(6n-3)}$
(d) None of these

25. ${}^{12}c_{5} + 2\ {}^{12}c_{4}+{}^{12}c_{3} = {}^{x}c_{5}$ the value of x is
(a) 14
(b) 9
(c) 12
(d) None of these

26. The number of ways in which 12 students can be equally divided into three groups
(a) 5775
(b) 7575
(c) 7755
(d) None of these

27. In CA Foundation a candidate has to pass in each of four papers in how many different ways he can be failed
(a) 18
(b) 4
(c) 15
(d) None of these

28. Third term of GP is 2/3 and its sixth term is 2/81 the value of its first term is
(a) 2
(b) 6
(c) 9
(d) None of these

29. How many code words are consisting of two alphabets followed by two digits between 1 to 9 can be formed?
(a) 6,15,800
(b) 46,800
(c) 7,19,500
(d) None of these

30. ${}^{n}p_{r}= {}^{n}p_{r}+1$ and ${}^{n}c_{r} = {}^{n}c_{r-1}$ find r
(a) 2
(b) 3
(c) 5
(d) None of these

31. A garden having 6 tall trees in a row in how many ways 5 children can stand between two trees to have a pose for photographs.
(a) 720
(b) 120

(c) 24
(d) None of these

32. An examination paper consists of 6 questions in Maths and 4 in stats in how many at least one from each can be solved
(a) 945
(b) 1024
(c) 1022
(d) None of these

33. If x = 1+1/3+1/9+1/27+----------up to infinity
y = 1 +1/4+ 1/16 +1/64 + ---------up to infinity find xy
(a) 2
(b) 1
(c) 8/9
(d) None of these

34. Fifth term of GP is $(3)^{1/3}$ the product of first nine terms is
(a) 8
(b) 27
(c) 243
(d) None of these

35. If x y z are in GP then $(x^2 + y^2)$ (xy+yz) and (y^2+z^2) are in
(a) AP
(b) GP
(c) HP
(d) None of these

36. If the word CHALK is written in dictionary find the rank of this word
(a) 31
(b) 32
(c) 35
(d) None of these

37. If a^2, b^2, c^2 are in AP, then (b + c), (c + a), (a + b) are in___
(a) AP
(b) GP
(c) HP
(d) None of these

38. How many 5-digit numbers can be formed with 2 3 4 6 7 8 and 9 between 64000 and 73000.
(a) 360
(b) 1020
(c) 1380
(d) None of these

39. A family of 4 brothers and 3 sisters are to be arranged for photograph in how many ways it is possible if no two sisters are together
(a) 1440
(b) 720
(c) 1790
(d) None of these

40. If p, q, r are in AP and x, y, z are in GP then $x^{q-r}.y^{r-p}.z^{p-q}$ is equal to
(a) 0
(b) -1
(c) 1
(d) None of these

41. If 9 balls are put in 3 bags in how many ways it is possible if bag one contains 5 balls
(a) 1776
(b) 1878
(c) 2016
(d) None of these

42. How many words can be formed with 4 letters selected from COMMERCIAL.
(a) 2190
(b) 1870
(c) 1780
(d) None of these

43. The number of words from the letter of the word BHARAT, in which B and H will never come together, is
(a) 360
(b) 240
(c) 120
(d) None of these

44. From a group of 8 men and 4 women, 4 persons are to be selected to from a committee of so that atleast 2 women are there in the committee in how many ways can it be done?
(a) 168
(b) 201
(c) 202
(d) 220

45. A business houses wishes to simultaneously elevate two of its six branch heads. In how many ways these elevation can take palace?
(a) 12
(b) 3
(c) 6
(d) 15

46. If the word APURVA is written in different ways find the possible ways if vowel and consonants are written alternatively
(a) 36
(b) 18
(c) 72
(d) None of these

47. A committee is formed out of 4 gents and 5 ladies in which number of ladies are at least double to the gents provided 2 gents are required to be taken
(a) 45
(b) 36
(c) 28
(d) None of these

48. If $y=1=x+x^2+x^3+$----------up to infinity the value of x is
(a) $\frac{1}{1-x}$
(b) $\frac{1}{1+x}$
(c) $\frac{4}{4-x}$
(d) None of these

49. In GP If $T_4= 3$ the product of first seven term shall be
(a) 3^5
(b) 3^6

(c) 3^7

(d) None of these

50. The number of parallelograms that can be formed by a set of 6 horizontal and 4 vertical lines,

(a) 60

(b) 90

(c) 120

(d) None of these

51. The sum of first five terms of A P is 75 find the third term

(a) 15

(b) 20

(c) 25

(d) None of these

52. If A B C D E and F are made to sit in a circle, in how many ways it is possible if A always have either B or C on his right and B always have either C or D on his right

(a) 3

(b) 6

(c) 18

(d) None of these

53. A polygon has 44 diagonals the number of sides are

(a) 8

(b) 9

(c) 10

(d) None of these

54. If the word STRAIGHT is written in different ways in how many ways the word starts with G and ends with T.

(a) 720

(b) 1440

(c) 360

(d) None of these

55. How many code words are possible with two alphabets followed by three digits between (1 to 9)

(a) 327600

(b) 331700

(c) 326700

(d) None of these

56. How many different factors can be made with 1,05,600.

(a) 127

(b) 113

(c) 119

(d) None of these

57. In how many ways at least 2 friends out of 10 can be invited

(a) 1013

(b) 975

(c) 1024

(d) None of these

58. The product of three numbers in GP is 729 and the sum of their square is 819. The number are

(a) 3,9,27

(b) 9,3,27

(c) 27,3,9

(d) None of these

59. In an Ap if $T_{32} = \frac{1}{45}$ and $T_{45} = \frac{1}{32}$ The T_n will be

(a) $\frac{n}{1441}$

(b) $\frac{n}{1440}$

(c) $\frac{n}{1140}$

(d) None of these

60. The first and fifth term of an A.P. with 40 terms is -29 and -15 respectively, the sum of all positive terms of A.P. is

(a) 1605

(b) 1705

(c) 1805

(d) None of these

61. The sum of n terms of an Arithmetic Progression is $2n^2$ the fifth term is

(a) 20

(b) 50

(c) 18

(d) 25

62. The number of ways 5 boys and 5 girls can be made to sit in a round table if no two boys are together

(a) 2550

(b) 2880

(c) 625

(d) 2476

63. How many odd numbers of four digit can be formed with digit 0, 1, 2, 3, 4, 7 and 8

(a) 150

(b) 300

(c) 120

(d) 210

64. ${}^{n}C_{p} + 2{}^{n}C_{p-1} + {}^{n}C_{p-2}$

(a) ${}^{n}C_{p}$

(b) ${}^{n+2}C_{p}$

(c) ${}^{n+1}C_{p+1}$

(d) ${}^{n+2}C_{p+1}$

65. Sum upto infinity of series

$\frac{1}{2} + \frac{1}{3^2} + \frac{1}{2^3} + \frac{1}{3^4} + \frac{1}{2^5} + \cdots \ldots \ldots \ldots \ldots$

(a) $\frac{19}{24}$

(b) $\frac{24}{19}$

(c) $\frac{5}{24}$

(d) None of these

66. Find the sum of 2.5 + 3.6 + 4.7 + 5.8 + ----------S_N

(a) $\frac{1}{6}n(n+1)(2n+1) + \frac{5n}{2}(n+1) + 4n$

(b) $\frac{1}{6}n(n+1)(2n+1) - \frac{5n}{2}(n+1) + 4n$

(c) $\frac{1}{6}n(n+1)(2n+1) + \frac{5n}{2}(n+1) - 4n$

(d) None of these

67. In a hall there are 10 chairs Numbered 1 −10. 3 ladies and 4 gents are made to sit, if ladies opt first out of the chairs Numbered 1 to 5 and gents opt out of the remaining find in how many ways they can be made to sit

(a) 2,100

(b) 50,400

(c) 8,400

(d) None of these

68. 10 persons are made to sit in a circle find in how many ways. neighbours are never together

(a) 181440

(b) 362880

(c) 184440

(d) None of these

69. Out of 6 gents and 4 ladies a committee is to be formed consisting of at least 2 ladies and atleast double the gents in how many ways it can be formed

(a) 136

(b) 62

(c) 60

(d) None of these

70. Find the sum of all 5 digit numbers formed with 2, 3, 5, 7 and 9

(a) 69,33,264

(b) 67,29,462

(c) 69,19,624

(d) None of these

71. In and AP if 8^{th} term is 15 find the sum first 15 terms

(a) 450

(b) 540

(c) 390

(d) None of these

72. 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

73. ${}^{(m+n)}P_4 = 840$ and ${}^{(m-n)}P_4 = 120$ find m

(a) 6

(b) 7

(c) 8

(d) None of these

74. $\frac{20^n+5^n}{20^{n-1}+5^{n-1}}$=10 is GP find (n+3)

(a) -1/2

(b) 1/2

(c) 5/2

(d) None of these

75. In two Arithmetic progressions if ratio of nth term is $(2n + 7): (5n - 9)$ the ration of sum of 200 terms is

(a) 987:208

(b) 208:987

(c) 52:242

(d) None of these

76. In an AP if $pT_P = qT_q$ the Tr terms is

(a) p+q-r

(b) p-q+r

(c) p-q-r

(d) None of these

77. Find value $(729), (729)^{\frac{1}{7}}, (729)^{\frac{1}{49}}, (729)^{\frac{1}{729}} \ldots\ldots\ldots\ldots\ldots\ldots S_{\infty}$

(a) 2187

(b) 729

(c) 6561

(d) None of these

78. $1+\frac{6}{4}+\frac{11}{16}+\frac{16}{64}+\frac{21}{256}+$ ……..S∞

(a) 32/9

(b) 21/9

(c) 23/9

(d) None of these

79. Find sum of all 4-digit numbers formed with 0, 4, 5, 7,

(a) 1,03,104

(b) 1.06.654

(c) 1,03,352

(d) None of these

80. 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

81. 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

82. 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

83. In an AP if ratio of t_7 and t_{10} is 5:7 what should be the ratio in t_8 and t_{11}

(a) 13:16

(b) 17:23

(c) 14:17

(d) None of these

84. A committee of 3 ladies and 4 gents is to be formed out of 8 ladies and 7 gents. Mrs. X refuse to serve in a committee in which Mr. Y is a member. The number of such committees is :

(a) 1530

(b) 1500

(c) 1520

(d) 1540

85. The sum of the first eight terms of a GP. is five times the sum of the first four terms; then the common ratio is:

(a) $\sqrt{2}$

(b) $-\sqrt{2}$

(c) $\pm\sqrt{2}$

(d) None of these

86. If ${}^{n}P_{r} = {}^{n}P_{r+1}$ and ${}^{n}C_{r} = {}^{n}C_{r-1}$ then find the value of n

(a) 2

(b) 3

(c) 4

(d) 5

87. Find the number of arrangements in which the letters of the word 'MONDAY' be arrangement so that the words thus formed begin with 'M" and do not end with 'N'.

(a) 720

(b) 120

(c) 96

(d) None of these

88. ${}^{n}C_{1} + {}^{n}C_{2} + {}^{n}C_{3} + {}^{n}C_{4} + \ldots\ldots + {}^{n}C_{n}$ equals:

(a) $2^{n}-1$

(b) 2^{n}

(c) $2^{n}+1$

(d) None of these

89. In a finite G.P., the product of two terms equal distant from the beginning and from the end is equal to the product of the first and the last term of the G.P. This statement is

(a) True

(b) False

(c) Cannot say

(d) None of these

90. The first term of an A.P. is 14 and the sums of the first five terms and the first ten terms are equal in magnitude but opposite in sign. The 3rd term of the AP is:

(a) $6\frac{4}{11}$

(b) 6

(c) $\frac{4}{11}$

(d) None of these

91. The sum of n terms of an A.P. is $3n^2 + n$; then its p^{th} term is

(a) 6P + 2

(b) 6P – 2

(c) 6P – 1

(d) None of these

92. The first term of an A.P. is 100 and the sum of whose first 6 terms is 5 times the sum of the next 6 terms, then the c.d. is –

(a) –10

(b) 10

(c) 5

(d) None of these

93. The numbers of parallelograms that can be formed by a set of 6 parallel lines intersected by the another set of 4 parallel lines is _____:

(a) 360
(b) 90
(c) 180
(d) 45

94. The value of N in $\frac{1}{7!} + \frac{1}{8!} = \frac{N}{9!}$ is

(a) 81
(b) 64
(c) 78
(d) 89

95. The numbers a, X, c are in A.P. if X = 25 and x, Y, c are in G.P. if Y = 7, then the value of (a, c) are:

(a) 1, 16
(b) 1, 25
(c) 1, 36
(d) 1, 49

96. The value of $A^{\frac{1}{2}} \times A^{\frac{1}{4}} \times A^{\frac{1}{8}} \ldots \ldots \ldots \infty$

(a) Zero
(b) Infinity
(c) $\frac{1}{2}$
(d) A

97. There are 15 points in a plane, out of there 6 are collinear. The number of straight lines formed by joining these points is:-

(a) 90
(b) 91
(c) 45
(d) 51

98. If ${}^{n}p_{r}$ =2880 and ${}^{n}c_{r}$ =120 then the value of r is :-

(a) -24
(b) 6
(c) 4
(d) 3

99. In an AP if 10th term is twice the 4th term and 23rd term is K times of the 8th term Find the value of K.

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

100. The sum of n terms of 2 APs are in the ratio of 7n-5/5n+17 find the ratio of their 6^{th} term

(a) 1:1
(b) 1:2
(c) 2:1
(d) None of these

SPACE FOR ROUGH WORK