

M.K.G

CA EDUCATION

9811429230 / 9212011367

WEBSITE: WWW.MKGEDUCATION.COM

EMAIL: MKGCAEDUCATION@GMAIL.COM

Youtube channel: https://www.youtube.com/channel/UCUFLIGc27drK59pH_273UVw?view_as=subscriber

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

TEST-2

CA FOUNDATION

(01-08-2021 3:30 p.m. to 5:30 p.m)

Business Mathematics and Logical Reasoning & Statistics

CHAPTERS

1. Sequence and Series
2. Time value of Money
3. Permutation and Combination
4. Equations

Time allowed: 2 hours

Maximum Marks : 100

Instructions:

1. Answer to be given in OMR sheet
 2. Negative marking applies
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01. Find EMI if Rs 45 lakh is repayable in 8 years @ 9% pa

a) Rs 65936

b) Rs 65900

c) Rs56789

d) none of these

- 02.** Find amount after 6 years 3 months If Rs 51000 is invested quarterly @ 11% p.a
- a) 17,89,500 b) 17,99,576 c) 17,98,790 d) none of these
- 03.** Find Bi monthly installment If Rs 45 lakh is repayable in 7 years @ 9% pa
- a) 154678 b) 1487900 c) Rs 145109 d) none of these
- 04.** If difference in Simple and Compound Interest for 6 years @ 10% is Rs 3,78,000 find Investment
- a) 22,02,797 b) 22,09,876 c) 23 14556 d) none of these
- 05.** A plant costing 76 lakh was purchased 9 years back Find rate of depreciation if written down value is Rs 32.89 lacs
- a) 8.89% b) 9.02% c) 8.98% d) none of these
- 06.** At Simple rate of interest an amount becomes 62000 in 2 years and 74,000 in 3 years what is the rate of interest
- a) 23.89% b) 31.57% c) 35.17% d) none of these
- 07.** An amount of Rs 65 lakh is receivable after 7 years @ 11% pa which is pre-poned to 4 years find Amount receivable if interest is applicable semi annually
- a) Rs 47 14 098 b) Rs 49,87,690 c) Rs 48,76,570 d) none of these
- 08.** An amount becomes 4 times in 15% pa on simple interest find after at what rate of interest it will become 5 times in the same time
- a) 16% b) 18% c) 20% d) none of these
- 09.** Find present value if Rs 20,000 pm is receivable @ 9% pa for next 9 years .
- a) Rs 14,76,788 b) Rs 19.87.879 c) Rs 16,98,675 d) none of these
- 10.** Find amount receivable after 6 years if Rs 40,000 qrtly is invested @ 6% p.a.
- a) Rs 9,60,000 b) Rs 11,45,340 c) Rs 12.43.800 d) none of these
- 11.** An amount becomes double in 5 years if compounded annually how long it will take if amount becomes 8 times
- a) 15 years b) 20 years c) 17 years d) none of these
- 12.** Find sum of $1 + \frac{5}{4} + \frac{9}{16} + \frac{13}{64} + \dots$ up to infinity

- a) $12/7$ b) $4/3$ c) $28/9$ d) none of these
- 13.** A plant with written down value Rs 23.90 lakhs was purchased 9 years back and was depreciated @ 12.50 % The cost of plant is
a) Rs 79 49 237 b) Rs 77,59,327 c) Rs 76,69,732 d) none of these
- 14.** A company wishes to replace a plant costing Rs 45 lakh after a period of 8 years when prices will be increased by 12 % and Rs 2.40 lakh will be realized from scrap of old plant . Find annual provision if Opportunity cost is 11% pa
a) Rs 4,98,675 b) Rs 4,09,765 c) Rs 4,04,742 d) none of these
- 15.** Find issue price of 11% bond of Rs 2000 redeemable after 9 years @ 10% premium if market rate of interest is 14 % pa
a) Rs 1764.71 b) Rs 1675,90 c) Rs 1701.23 d) none of these
- 16.** Find the sum of $1.2 + 2.3 + 3.4 + 4.5 + \dots$ upto n terms
a) $1/6 [n(n+1) (2n+4)]$ b) $1/6[n(n+1)(2n-4)]$ c) $1/6 [n(n-1)(2n+4)]$ d) none of these
- 17.** Find Issue price of 12% debentures of Rs 1000 redeemable after 7 years at 5% discount if market rate of interest is 13%
a) Rs 934.50 b) Rs 948.92 c) Rs 899.78 d) none of these
- 18.** A company offers a 12% bond of Rs 1200 at 10% discount which is redeemable after 8 years at 5% premium if market rate of interest is 12%
a) under priced b) over priced c) actual price d) none of these
- 19.** A company had declared 10% dividend during last year on a share of face value Rs 1000 if cost of capital is 18% and growth is 5% find market price of share
a) Rs 807.70 b)Rs 879.90 c)Rs 888.76 d) none of these
- 20.** Find present value of an annuity of Rs 15000 pm for 4 years @ 12% pa starting from today
a) Rs 598,789 b) Rs 572980 c) Rs575305 d) none of these
- 21.** Future Value in case of advance annuity is always ----- than that of Ordinary annuity
a) greater than b) less than c) both equal d) none of these

22. Present value in case of advance annuity is always -----than that of ordinary annuity .
- a) equal b) lower c) higher d) none of these
23. Find amount after three years if Rs 5,00,000 is invested @ 6% in first year 7% in second year and 8% in third year
- a) Rs 612468 b) Rs 6 23 450 c) Rs 645760 d) none of these
24. 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
25. An amount at simple interest becomes 795 in 4 years and 850 in 5 years find rate of interest
- a) 9.56% b) 9.87% c) 9.23% d) none of these
26. 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
27. Find fortnightly installment if a loan of Rs 20 lakh @ 12 % is repayable in 2 years
- a) Rs 47,350 b) Rs 46,970 c) Rs 48,245 d) none of these
28. A loan of Rs 5,00,000 was repaid in 50,000 annually @ 5% find the number of instalments
- a) 13 years b) 12 years c) 14 years d) none of these
29. A company wishes to replace a plant costing Rs 60 lakh after a period of 9 years when prices will be increased by 10% but company would realize Rs 3,00,000 from old plant . Find annual provision to replace the plant if opportunity cost is 11% pa
- a) Rs 4,44,793 b) Rs 4,56,879 c) Rs 7,98,564 d) none of these
30. If difference in simple interest and compound interest for 5 years if compounded quarterly @ 11% is Rs 5,60,000 find investment
- a) Rs 40,89,765 b) Rs 41,46,453 c) Rs 32 84 457 d) none of these

31. Find issue price of 12% bond of Rs 2000 redeemable after 7 years at a premium of 10% if opportunity cost is 14% p a
- a) RS 1832.80 b) Rs 1876.90 c) Rs 1908.40 d) none of these
32. A house was purchased by paying Rs 12 lakh as down payment and monthly instalment of Rs 30,000 for next 10 years @ 12% pa find cost of house
- a) Rs 32 91016 b) Rs 2091016 c) Rs 29,87,650 d) none of these
33. Find investment if Rs 21000 pm is required on perpetual basis @ 9% pa
- a) Rs 28,00,000 b) Rs 32,00,000 c) Rs 40,00,000 d) none of these
34. An amount of Rs 20 lakh was lent to A B and C @10% pa for 6 years 7 years and 8 years respectively if all repay equal amount find amount lent to B
- a) Rs 789890 b) Rs 664681 c) Rs 6 87,340 d) none of these
35. Find present value if Rs 20,000 quarterly is receivable for next 8 years on advance basis if rate of interest is 10% pa
- a) Rs 447908 b) Rs 472876 c) Rs 456654 d) none of these
36. Find Market price of share if Expected Dividend is Rs 25 if cost of capital is 18% and growth is 6%
- a) Rs 187.98 b) Rs 208.33 c) Rs 200.76 d) none of these
37. Find cost of equity if expected dividend is Rs24 with growth of 7%pa on a share with MP 240.
- a) 17% b) 12% c) 15.50% d) none of these
38. A company had declared dividend @ 12% on face value of Rs 500 with a growth of 6% if cost of capital is 19% find Market price of share.
- a) Rs 423 b) Rs 453 c) Rs 462 d) none of these
39. 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
40. In how many ways 4 letters can be selected out of EXAMINATION

- a) 125 b) 143 c) 136 d) none of these
41. How many factors can be made with 25600
- a) 33 b) 38 c) 47 d) none of these
42. 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
43. find sum of all 4 digit numbers formed with 4 5 6 and 7
- a) 146652 b) 162345 c) 154784 d) none of these
44. 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
45. 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
46. 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
47. 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
48. 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
49. If the word GOOGLE is written in dictionary find the rank of the word dictionary
- a) 195 b) 194 c) 172 d) none of these
50. 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

51. A company is considering proposal of purchasing a machine either by making full payment of Rs 4,000 or by leasing it for four years an annual hire of Rs 1250. Which option is preferable if $r=14\%$ pa

- a) buying is better b) Hiring is better c) both are equally viable d) none of these

52. 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

53. If an amount of Rs 10,000 pm is invested on advance basis for 4 years @ 9 % p.a find the amount on maturity

- a) 579521 b) 623456 c) 549876 d) none of these

54. How many triangles can be formed with 12 points if 5 are collinear

- a) 210 b) 220 c) 230 d) none of these

55. How many straight lines can be formed with 10 points if 5 are collinear

- a) 35 b) 37 c) 36 d) none of these

56. 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

57. 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

58. 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

59. ${}^nP_r = 336$ and ${}^nC_r = 56$ the value of r is

- a) 3 b) 8 c) 6 d) none of these

60. find sum of $1/3.9 + 1/9.15 + 1/15.24 + \dots$ -n terms
- a) $1/3 (6n+3)$ b) $n/3(6n+3)$ c) $n/3(6n-3)$ d) none of these
61. ${}^{12}C_5 + 2 {}^{12}C_4 + {}^{12}C_3 = x {}^{12}C_5$ the value of x is
- a) 14 b) 9 c) 12 d) none of these
62. 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
63. Rs 8,000 becomes Rs 10,000 in two years at simple interest. The amount that will become 6875 three years at the same rate of interest
- a) Rs 5,000 b) Rs 5,500 c) Rs 6,000 d) none of these
64. A company is considering proposal to install a plant costing Rs 70 lacs which will save costing @ Rs 14,50,000 for next 7 years . Is the proposal viable considering opportunity cost @ 14%
- a) viable b) not viable c) can not be decided d) none of these
- 65 . 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
66. 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
67. The sum was invested for three years @ 9% 6% and 3% respectively in first second and third year if sum becomes Rs 550 after three years find amount invested
- a) Rs 462 b) Rs360 c) Rs 300 d) none of these
68. If Rs 1,00,000 is invested @ 5% and the interest of 10 years is added to principal find number of years when the amount will become 2,00,000 if simple interest is applicable
- a) 16 years 8 months b) 6 years 3 months c) 16 years d) none of these
69. at what rate of simple interest an amount becomes Rs2784 in 4 years and Rs 2688 in three years

- a) 4% b) 8% c) 5% d) none of these

70. The simple interest on a sum of money is $\frac{4}{9}$ of the principal and rate of interest is equal to the no of years find rate of interest

- a) 3.14% b) 5% c) 6.67 % d) none of these

71. 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

72. ${}^n P_r = {}^n P_{r+1}$ and ${}^n C_r = {}^n C_{r-1}$ find r

- a) 2 b) 3 c) 5 d) none of these

73 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

74. an examination paper consist of 6 question 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

75. If $x = 1 + \frac{1}{3} + \frac{1}{9} + \frac{1}{27} + \dots$ up to infinity

$Y = 1 + \frac{1}{4} + \frac{1}{16} + \frac{1}{64} + \dots$ up to infinity find xy

- a) 2 b) 1 c) $\frac{8}{9}$ d) none of these

76. An amount of Rs 40 lacs was invested in securities during 2015-16 which was realized for Rs 65.00 lakh during 2020-21 find Compounded annual growth rate

- a) 11.89% b) 10.19 % c) 13.08% d) none of these

77. 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

78. 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) H P d) none of these

79. A house was purchased on installment by paying Rs 40,000 pm for ten years if rate of interest is 9% pa what should be the cost of house

- a) Rs 7.98.416 b) Rs7,89,416 c) Rs 7,63,540 d) none of these

80. If the word CHALK is written in dictionary find the rank of this word

- a) 31 b) 32 c) 35 d) none of these

81. If α and β are the roots of equation $3x^2+9x-12=0$ the equation whose roots are α^3 and β^3 is

- a) 63 b) -63 c) 72 d) none of these

82. if one of the roots of equation is $2 + \sqrt{3}$ find the equation

- a) $x^2-4x+1=0$ b) $x^2+4x+1=0$ c) $x^2-4x-1=0$ d) none of these

83. If Arithmetic Mean between roots of equation is 6 while GM is 3 find the required equation

- a) $x^2+12x+9=0$ b) $x^2-12x+9=0$ c) $x^2-12x-9=0$ d) none of these

84. If effective rate of interest is 13.34% on compounding monthly what is the nominal rate of interest

- a) 12.13% b) 12.59% c) 11.90 % d) none of these

85. 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

86. 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

87. The roots of the equations $3x^2-8x+4=0$ are

- a) Real and equal b) real and unequal c) unreal and unequal d) none of these

88. An amount becomes 16 times in 8 years if compounded semi annually the rate of interest is

- a) 37.84% b) 100% c) 82.40 % d) none of these

- 89.** In how many ways 4 letters can be selected out of the word COMMERCIAL
- a) 210 b) 113 c) 197 d) none of these
- 90.** if one of the roots of the equation is double to the other root in $x^2-3x+p=0$ the value of p is
- a) 1 b) 2 c) 3 d) none of these
- 91.** An amount of Rs 32.00 lakh receivable after 8 years is now pre-poned to 5 years find the receivable amount after 5 years if rate of interest is @ 11% compounded quarterly .
- a) Rs 21,90,870 b)Rs23.89,716 c) Rs 23,10,830 d) none of these
- 92.** 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
- 93.** How many words can be formed with 4 letters selected from COMMERCIAL .
- a) 2190 b) 1870 c) 1780 d) none of these
- 94.** IF the sum of the roots of equation $ax^2+bx+c=0$ is equal to the sum of the squares of their reciprocals then $b^2/ac + bc/a^2$ is equal to
- a) 2 b) -2 c) 1 d) none of these
- 95.** If one of the roots of equation is reciprocal of other in $5x^2+13x+p=0$ the value of p is
- a) -5 b) 5 c) 1/5 d) none of these
- 96.** If α and β are the roots of equation $x^2-5x+6=0$ then the equation whose roots are $(\alpha^2+\beta)$ and $(\alpha+\beta^2)$
- a) $x^2-9x+99=0$ b) $x^2-18x+90=0$ c) $x^2-18x+77=0$ d) none of these
- 97.** A plant costing Rs 56 lacs will be reduced to 14% of its cost if depreciated @ 15% find the number of years
- a) 11 yrs b) 12yrs c) 13 yrs d) none of these
- 98.** 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

99. find semi quarterly installment if a loan of Rs 56 lacs is repayable in 7 years @ 10%pa

- a) Rs 132870 b) Rs 123765 c) Rs 139650 d) none of these

100. 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

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