Date: _____

Full Name: _____

Email Id: _____

Test No:_____Subject: _____

Marks Scored: Total_____/_____

Que. No.	Marks Obtained	Que. No.	Marks Obtained	Que. No.	Marks Obtained	Que. No.	Marks Obtained

Remarks:

Subject Strategy:

CA FOUNDATION – NEW SYLLABUS
BUSINESS MATHEMATICS, LOGICAL REASONING AND STATISTICS

MARKS: 50

TEST NO. 1 Chapter 1 to 6

QUESTION PAPER

INSTRUCTIONS:

- Mention your name, subject name & Test No on your first page of the Answer Sheet.
- Paper will only be accepted when uploaded on the Students dashboard.
- Login in to your dashboard, and upload your answers under "**My Answer sheet**" tab
- You can Use **Adobe Scan app or Other**, available in Play Store / App Store for scanning your answer sheet.
- Scan your answer sheet as a single pdf in order to avoid rejection or delay in evaluation.
- Upload your pdf copy in a clear format which is legible to read.

OMR SHEET

Q.N.		Q.N.		Q.N.	
1.	Ⓐ Ⓑ Ⓒ Ⓓ	11.	Ⓐ Ⓑ Ⓒ Ⓓ	21.	Ⓐ Ⓑ Ⓒ Ⓓ
2.	Ⓐ Ⓑ Ⓒ Ⓓ	12.	Ⓐ Ⓑ Ⓒ Ⓓ	22.	Ⓐ Ⓑ Ⓒ Ⓓ
3.	Ⓐ Ⓑ Ⓒ Ⓓ	13.	Ⓐ Ⓑ Ⓒ Ⓓ	23.	Ⓐ Ⓑ Ⓒ Ⓓ
4.	Ⓐ Ⓑ Ⓒ Ⓓ	14.	Ⓐ Ⓑ Ⓒ Ⓓ	24.	Ⓐ Ⓑ Ⓒ Ⓓ
5.	Ⓐ Ⓑ Ⓒ Ⓓ	15.	Ⓐ Ⓑ Ⓒ Ⓓ	25.	Ⓐ Ⓑ Ⓒ Ⓓ
6.	Ⓐ Ⓑ Ⓒ Ⓓ	16.	Ⓐ Ⓑ Ⓒ Ⓓ	26.	Ⓐ Ⓑ Ⓒ Ⓓ
7.	Ⓐ Ⓑ Ⓒ Ⓓ	17.	Ⓐ Ⓑ Ⓒ Ⓓ	27.	Ⓐ Ⓑ Ⓒ Ⓓ
8.	Ⓐ Ⓑ Ⓒ Ⓓ	18.	Ⓐ Ⓑ Ⓒ Ⓓ	28.	Ⓐ Ⓑ Ⓒ Ⓓ
9.	Ⓐ Ⓑ Ⓒ Ⓓ	19.	Ⓐ Ⓑ Ⓒ Ⓓ	29.	Ⓐ Ⓑ Ⓒ Ⓓ
10.	Ⓐ Ⓑ Ⓒ Ⓓ	20.	Ⓐ Ⓑ Ⓒ Ⓓ	30.	Ⓐ Ⓑ Ⓒ Ⓓ

MCQ Marks Scored: /

Note: Kindly mention the question number and sub-question properly.

- Questions with incorrect question number/sub question number will not be evaluated.
- Start new questions on new page.

CA (FOUNDATION- NEW SYLLABUS)

BUSINESS MATHEMATICS, LOGICAL REASONING AND STATISTICS

CHAPTER: 1 to 6

TEST NO- 1 MARKS- 50

QUESTION PAPER DURATION- 90 Minutes

INSTRUCTIONS:

1. **All the questions are compulsory.**
2. **Properly mention Test no. on First Page and Page no. on every answer sheet.**
3. **Working Notes are compulsory wherever required in support of your solution.**
4. **Do not copy any solution from material.**
5. **Attempt as much as you know to fairly judge your performance.**
6. **Please upload your Answer Sheet Horizontally.**
7. **Copy once get evaluated by Evaluator cannot be re-uploaded by the student.**
8. **Always check correct Test No. of your subject while uploading answer sheet.**
9. **Handwriting should be clean.**

Multiple Choice Questions

Total No. of Questions – 50 (1 Mark each)

1. If 2s : 3t is the duplicate ratio of 2s – p : 3t – p, then
   (a) $p^2 = 6st$
   (b) $p = 6st$
   (c) $2p = 3st$
   (d) none of these

2. The mean proportional between 1.4 gms and 5.6 gms is
   (a) 28 gms
   (b) 2.8 gms
   (c) 3.2 gms
   (d) none of these

3. The value of $(8/27)^{(-1/3)} \times (32/243)^{(-1/5)}$ is
   (a) 9/4
   (b) 4/9
   (c) 2/3
   (d) none of these

4. If α and β are the roots of the equation $x^2 + 7x + 12 = 0$, then the equation whose roots $(\alpha + \beta)^2$ and $(\alpha - \beta)^2$ will be:
   (a) $x^2 – 14x + 49 = 0$
   (b) $x^2 – 24x + 144 = 0$
   (c) $x^2 – 50x + 49 = 0$
   (d) $x^2 – 19x + 144 = 0$

5. Given log2 = 0.3010 and log3 = 0.4771, the value of log 6 is
   (a) 0.9030
   (b) 0.9542
   (c) 0.7781
   (d) none of these

6. The equation $\frac{12x+1}{4} = \frac{15x-1}{5} + \frac{2x-5}{3x-1}$ is true for
   (a) x = 1
   (b) x = 2
   (c) x = 5
   (d) x = 7

7. One student is asked to divide a half of a number by 6 and the other half by 4, and then to add the two quantities. Instead of doing so, the student divides the given number by 5. If the answer is 4 short of the correct answer, then the number was
   (a) 320
   (b) 400
   (c) 480
   (d) none of these

8. For open-end classification, which of the following is the best measure of central tendency?
   (a) AM
   (b) GM
   (c) Median
   (d) Mode

9. 1.5x + 2.4y = 1.8, 2.5(x + 1) = 7y have solutions as
   (a) (0.5, 0.4)
   (b) (0.4, 0.5)
   (c) (1/2, 2/5)
   (d) (2, 5)

10. $\frac{x}{0.01} + \frac{(y + 0.03)}{0.05} = \frac{y}{0.02} + \frac{(x + 0.03)}{0.04} = 2$

   (a) (1, 2)
   (b) (0.1, 0.2)
   (c) (0.01, 0.02)
   (d) (0.02, 0.01)

11. $\frac{xy}{(y-x)} = 110, \frac{yz}{(z-y)} = 132, \frac{zx}{(z+x)} = \frac{60}{11}$
   (a) (12, 11, 10)
   (b) (10, 11, 12)
   (c) (11, 10, 12)
   (d) (12, 10, 11)

12. 3x - 4y + 70z = 0, 2x + 3y - 10z = 0, x + 2y + 3z = 13
   (a) (1, 3, 7)
   (b) (1, 7, 3)
   (c) (2, 4, 3)
   (d) (-10, 10, 1)

13. y is older than x by 7 years. 15 years back, x's age was 3/4 of y's age. Their present ages are:
(a) (x = 36, y = 43)
(b) (x = 50, y = 43)
(c) (x = 43, y = 50)
(d) (x = 40, y = 47)

14.The sum of the digits in a three digit number is 12. If the digits are reversed the number is increased by 495 but reversing only of the ten's and unit digits increases the number by 36.

The number is
(a) 327
(b) 372
(c) 237 of
(d) 273

15. The equation x2 –(p+4)x + 2p + 5 = 0 has equal roots the values of p will be.

(a) ± 1
(b) 2
(c) ± 2
(d) -2

16. The roots of the equation x2 + (2p–1)x + p2 = 0 are real if.

(a) p ≥ 1
(b) p ≤ 4
(c) p > 1/4
(d) p < 1/4

17. The equation

$$\frac{3(3x^2+15)}{6}+2x^2+9=\frac{2x^2+96}{7}+6$$

has got the solution as:
a) (1, 1)
b) (1/2, -1)
c) (1, -1)
d) (2, -1)

18. The students in three classes are in the ratio 2 : 3 : 5. If 40 students are increased in each class, the ratio changes to 4 : 5 : 7. Originally, the total number of students was:
(a) 180
(b) 400
(c) 100
(d) 200

19. The sides of an equilateral triangle are shortened by 12 units, 13 units, and 14 units, respectively, and a right-angle triangle is formed. The side of the equilateral triangle is:
(a) 17 units
(b) 16 units
(c) 15 units
(d) 18 units

20. A distributor of apple juice has 5000 bottles in the store that it wishes to distribute in a month. From experience, it is known that demand D (in number of bottles) is given by: $D = -2000p^2 + 2000p + 17000$. The price per bottle that will result in zero inventory is:
(a) ₹ 3
(b) ₹ 5
(c) ₹ 2
(d) none of these

21. The sum of two irrational numbers multiplied by the larger one is 70, and their difference is multiplied by the smaller one is 12. The two numbers are:
(a) $3\sqrt{2}, 2\sqrt{3}$
(b) $5\sqrt{2}, 3\sqrt{5}$
(c) $2\sqrt{2}, 5\sqrt{2}$
(d) none of these

22. The roots of the equation $x^3 + x^2 - x - 1 = 0$ are:
(a) (−1, −1, 1)
(b) (1, 1, −1)
(c) (−1, −1, −1)
(d) (1, 1, 1)

23. The roots of the equation $x^3 + 7x^2 - 21x - 27 = 0$ are:
(a) (−3, −9, −1)
(b) (3, −9, −1)
(c) (3, 9, 1)
(d) (−3, 1, 9)

24. An employer recruits experienced (x) and fresh workmen (y) for his firm under the condition that he cannot employ more than 9 people. x and y can be related by the inequality:
(a) $x + y \neq 9$
(b) $x + y \leq 9$ $x \geq 0, y \geq 0$
(c) $x + y \geq 9$ $x \geq 0, y \geq 0$
(d) none of these

25. On average, experienced person does 5 units of work while a fresh one does 3 units of work daily,but the employer has to maintain an output of at least 30 units of work per day. This situation can be expressed as:
(a) $5x + 3y \leq 30$
(b) $5x + 3y > 30$
(c) $5x + 3y \geq 30$ $x \geq 0, y \geq 0$
(d) none of these

26. The rules and regulations demand that the employer should employ not more than 5 experienced hands to 1 fresh one, and this fact can be expressed as:
(a) $y \geq x / 5$
(b) $5y \leq x$
(c) $5y \geq x$
(d) none of these

27. The union, however, forbids him to employ less than 2 experienced persons to each fresh person. This situation can be expressed as:
(a) $x \leq y / 2$
(b) $y \leq x / 2$
(c) $y \geq x / 2$
(d) $x > 2y$

28. P = ₹ 8,500, A = ₹ 10,200, R = 12 ½ % SI, t will be:
(a) 1 yr. 7 mth.
(b) 2 yrs.
(c) 1 ½ yr.
(d) none of these

29. A machine is depreciated at the rate of 20% on reducing balance. The original cost of the machine was ₹ 1,00,000 and its ultimate scrap value was ₹ 30,000. The effective life of the machine is:
(a) 4.5 years (appx.)
(b) 5.4 years (appx.)
(c) 5 years (appx.)
(d) none of these

30. A = ₹ 1,200, n = 12 years, i = 0.08, V = ?

Using the formula:

$$V = \frac{A}{i}\left[1 - \frac{1}{(1+i)^n}\right]$$

Value of V will be:
(a) ₹ 3,039
(b) ₹ 3,990
(c) ₹ 9,930
(d) ₹ 9,043.30

31. If

$$\log \frac{a-b}{2} = \frac{1}{2}(\log a + \log b)$$

the value of a^2+b^2 is:

(a) 6ab
(b) 8ab
(c) $6a^2b^2$
(d) None of these

32. A man purchased a house valued at ₹ 3,00,000. He paid ₹ 2,00,000 at the time of purchase and agreed to pay the balance with interest at 12% per annum compounded half yearly in 20 equal half yearly installments. If the first installment is paid after six months from the date of purchase then the amount of each installment is
[Given log 10.6 = 1.0253 and log 31.19 = 1.494]
(a) ₹ 8,718.45
(b) ₹ 8,769.21
(c) ₹ 7,893.13
(d) None of these

33. 10 examination papers are arranged in such a way that the best and worst papers never come together. The number of arrangements is:
(a) 9x8!
(b) 10!
(c) 8x9!
(d) None of these

34. n articles are arranged in such a way that 2 particular articles never come together. The number of such arrangements is:
(a) (n-2) x(n-1)!
(b) (n-1) x(n-2)!
(c) n!
(d) None of these

35. If 12 school teams are participating in a quiz contest, then the number of ways the first, second, and third positions may be won is:
(a) 1,230
(b) 1,320
(c) 3,210
(d) None of these

36. The number of ways in which 8 sweats of different sizes can be distributed among 8 persons of different ages so that the largest sweat always goes to the youngest assuming that each one of them gets a sweat is:
(a) 8!
(b) 5040
(c) 5039
(d) None of these

37. The number of arrangements in which the letters of the word 'MONDAY' be arranged so that the words thus formed begin with M and do not end with N is:
(a) 720
(b) 120
(c) 96
(d) None of these

38. Given that $\log_{10} 2 = x$ and $\log_{10} 3 = y$, the value of $\log_{10} 120$ is expressed as:

(a) $2x-y+1$
(b) $2x+y+1$
(c) $2x-y-1$
(d) None of these

39. The Supreme Court has given a 6 to 3 decision upholding a lower court; the number of ways it can give a majority decision reversing the lower court is:
(a) 256
(b) 276
(c) 245
(d) 226

40. Five bulbs of which three are defective are to be tried in two bulb points in a dark room. Number of trials the room shall be lighted is:
(a) 6
(b) 8
(c) 5
(d) 7

41. The number of even numbers greater than 300 can be formed with the digits 1, 2, 3, 4, 5 without repetition is:
(a) 110
(b) 112
(c) 111
(d) None of these

42. The value of

$$\frac{(243)^{0.13} \times (243)^{0.07}}{(7)^{0.25} \times (49)^{0.075} \times (343)^{0.2}}$$

is:

(a) $\frac{3}{7}$
(b) $\frac{7}{3}$
(c) $1\frac{3}{7}$
(d) $2\frac{2}{7}$

43.

$$\sum_{i=4}^{7} \sqrt{2i-1}$$

can be written as:

(a) $\sqrt{7}+\sqrt{9}+\sqrt{11}+\sqrt{13}$
(b) $2\sqrt{7}+2\sqrt{9}+2\sqrt{11}+2\sqrt{13}$
(c) $2\sqrt{7}+2\sqrt{9}+2\sqrt{11}+2\sqrt{13}$
(d) None of these

44. The sum of n terms of an AP is:

3n2 + 5n

The series is:

(a) 8, 14, 20, 26
(b) 8, 22, 42, 68
(c) 22, 68, 114, ...
(d) none of these

45.The sum of the series

$$\frac{1}{\sqrt{3}} + 1 + \frac{3}{\sqrt{3}} + \ldots$$

to 18 terms is

(a) $9841\frac{(1+\sqrt{3})}{\sqrt{3}}$
(b) 9841
(c) $\frac{9841}{\sqrt{3}}$
(d) none of these

46. Sum of n terms of the series 0.1 + 0.11 + 0.111 + ... is
(a) 1/9 [n - (1 - (0.1)^n)]
(b) 1/9 [n - (1 - (0.1)^n)/9]
(c) n - 1 - (0.1)^n/9
(d) none of these

47.The sum of all natural numbers from 100 to 300 which are exactly divisible by 4 or 5 is:
(a) 10,200
(b) 15,200
(c) 16,200
(d) none of these

48.The population of a country was 55 crores in 2005 and is growing at 2% p.a C.I. The population in the year 2015 is estimated as:
(a) 5705
(b) 6005
(c) 6700
(d) none of these

49.A dietician recommends a mixture of two kinds of foods to a person so that the mixture contains at least 45 units of carbs, 25 units of protein, 15 units of fat, and 15 units of fiber. The above contents of nutrients are available in the foods as below:

	Carbs	Protein	Fat	Fibre
Food-1	20	5	3	2
Food-2	10	2	4	5

If x units of food-1 is mixed with y units of food-2, how can the dietician's recommendation be expressed?
(a)$20x + 10y \leq 25$; $5x + 2y \geq 45$; $3x + 4y \leq 15$; $2x + 5y \geq 15$; $x \geq 0$; $y \geq 0$
(b)$20x + 10y \geq 45$; $5x + 2y \geq 25$; $3x + 4y \leq 15$; $2x + 5y \geq 15$; $x \geq 0$; $y \geq 0$
(c)$20x + 10y \geq 45$; $5x + 2y \geq 25$; $3x + 4y \geq 15$; $2x + 5y \geq 15$; $x \geq 0$; $y \geq 0$
(d)$20x + 10y \geq 45$; $5x + 2y \geq 25$; $3x + 4y \leq 15$; $2x + 5y \leq 15$; $x \geq 0$; $y \geq 0$

50. The value of a machine depreciates every year at the rate of 10% per annum, on its value at the beginning of that year. If the present value of the machine is ₹72,900, then the machine's worth 3 years ago was:
(A) ₹80,000
(B) ₹94,710
(C) ₹1,00,000
(D) ₹75,087