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PRESIDENCY UNIVERSITY

BENGALURU

End - Term Examinations – May / June 2026

Date: 27 -05-2026

Time: 09:30am – 12:30pm

School: SOC	Program:B.COM(CA foundation)	
Course Code: CBS2046	Course Name: Quantitative Aptitude	
Semester: II	Max Marks: 100	Weightage: 50%

CO - Levels	C01	C02	C03	C04	C05
Marks	36	34	30	-	-

Instructions:

- (i) Read all questions carefully and answer accordingly.
- (ii) Do not write anything on the question paper other than roll number.

Part A

Answer ALL the Questions. Each question carries 1 marks.

100 x 1=100

1	A person invests ` 500 at the start of each year with a bank which pays interest at 10% p.a. C.I. annually. The amount standing to his credit one year after he has made his yearly investment for the 12th time is - (a) ` 11,761.35 (b) ` 10,000 (c) ` 12,000 (d) None of these	1 Marks	L1	C01
2	In _____ first payment/receipt takes place at the end of first period. (a) Annuity immediate (b) Annuity regular (c) Annuity due (d) Annuity special	1 Marks	L1	C01
3	Raja aged 40 wished his wife Rani to have `40 Lakhs at his death. If his expectation of life is another 30 years and he starts making equal annual investments 3% compound interest p.a. how much should he invest annually? (a) `84,448 (b) `84,450 (c) `84,449 (d) `84,077	1 Marks	L2	C01

4	An investor intends purchasing a three year ` 1,000 par value bond having nominal interest rate of 10%. At what price the bond may be purchased now if it matures at par and the investor requires a rate of return of 14%?</p> <p>(a) `1,026.29 (b) `995.22 (c) `826.36 (d) `907.125	1 Marks	L3	CO1
5	The principal goes on changing every year in - (a) simple interest (b) compound interest (c) effective interest (d) All of the above	1 Marks	L2	CO1
6	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% p.a. compounded half yearly in 20 equal half yearly installments. If the first installment is paid after six months from the data of purchase then the amount of each installment is [Given Log 10.6 = 1.0253 and log 31.19 = 1.494] (a) `8,719.66      (b) `8,769.21 (c) `7,893.13 (d) None of these	1 Marks	L2	CO1
7	There are 7 men and 3 ladies. Find the number of ways in which a committee of 6 can be formed of them if the committee is to include at least 2 ladies? (a) 120 (b) 160 (c) 140 (d) 150	1 Marks	L3	CO2
8	A committee of 3 ladies and 4 gents is to be formed out of 8 ladies and 7 gents. Mrs.X refuses to serve in a committee in which Mr.Y is a member. The number of such committees is - (a) 1,530 (b) 1,500 (c) 1,520 (d) 1,540	1 Marks	L3	CO2
9	A person has 10 friends of which 6 of them are relatives. He wishes to invite 5 persons so that 3 of them are relatives. In how many ways he can invites? (a) 450 (b) 600 (c) 120 (d) 810	1 Marks	L2	CO3
10	If all the permutations of the letters of the word "CHALK" are written in a dictionary the rank of this word will be - (a) 30 (b) 31 (c) 32 (d) None	1 Marks	L2	CO3

11	In how many ways can be letters of the word 'VIOLENT' be arranged so that the vowels occupy even places only? (a) 1,440 (b) 240 (c) 480 (d) 144	1 Marks	L1	CO2
12	How many different words can be formed beginning with 'E' of the word TRIANGLE? (a) 8! (b) 7! (c) 6! (d) 2! x 6!	1 Marks	L1	CO2
13	If $A \Delta B = (A-B) \cup (B-A)$ and $A = \{1,2,3,4\}$, $B = \{3,5,7\}$ then $A \Delta B$ is (a) $\{1,2,4,5,7\}$ (b) $\{3\}$ (c) $\{1,2,3,4,5,7\}$ (d) None of these	1 Marks	L1	CO1
14	Identify the elements of P if set $Q = \{1\ 2\ 3\}$ and $P \times Q = \{(4,1)\ (4,2)\ (4,3)\ (5,1)\ (5,2)\ (5,3)\ (6,1)\ (6,2)\ (6,3)\}$ (a) $\{3\ 4\ 5\}$ (b) $\{4\ 5\ 6\}$ (c) $\{5\ 6\ 7\}$ (d) None	1 Marks	L2	CO1
15	If $A = \{1,2\}$ and $B = \{3, 4\}$. Determine the number of relations from A and B: (a) 3 (b) 16 (c) 5 (d) 6	1 Marks	L3	CO2
16	If $A = \{1,2,3\}$ then $R = \{(1,1),(2,2),(3,3),(1,2)\}$ is (a) reflexive and transitive but not symmetric (b) reflexive and symmetric but not transitive (c) symmetric and transitive but not reflexive (d) identity relation	1 Marks	L2	CO2
17	"Is greater than" over the set of all natural number is known as (a) Transitive (b) Symmetric (c) Reflexive (d) Equivalence	1 Marks	L2	CO2
18	$\{(x,y) \mid y=x\}$ is (a) Reflexive (b) Symmetric (c) Transitive (d) Equivalence	1 Marks	L1	CO1
19	The middle most value of a set of observations is (a) Median (b) Mode (c) Mean (d) None	1 Marks	L2	CO3
20	Relation between mean, median & mode is (a) mean - mode = 2 (mean - median) (b) mean - median = 3 (mean - mode) (c) mean - median = 2 (mean - mode)	1 Marks	L1	CO1

	(d) mean - mode = 3 (mean - median)			
21	Theoretically the best average for finding out the most common value (a) Median (b) Geometric mean (c) Mode (d) Arithmetic mean	1 Marks	L2	CO2
22	If the variance of 5, 7, 9 and 11 is 4, then the coefficient of variation is (a) 25 (b) 15 (c) 17 (d) 19	1 Marks	L1	CO3
23	Find the mean deviation about mean of 4,5,6,8,3: (a) 7.2 (b) 5.2 (c) 1.44 (d) 1.70	1 Marks	L2	CO1
24	If high values of one tend to low values of the other, they are said to be (a) Negatively correlated (b) Inversely correlated (c) Both (d) None	1 Marks	L3	CO2
25	If two variables x and y are independent then the correlation coefficient between x and y is_____. (a) Positive (b) Negative (c) Zero (d) One	1 Marks	L2	CO1
26	Out of the two lines of regression given by $x+2y=4$ and $2x+3y-5=0$, the regression line of x on y is: (a) $2x+3y-5=0$ (b) $x+2y=4$ (c) $x+2y=0$ (d) The given lines can't be regression lines.	1 Marks	L2	CO2
27	If the regression line of x on y is $3x + 2y = 100$, then find the value of b_{xy}? (a) $-\frac{2}{3}$ (b) $\frac{10}{3}$ (c) $\frac{3}{2}$ (d) $\frac{2}{3}$	1 Marks	L1	CO2
28	If the regression coefficient of y on x, the coefficient of correlation between x and y and variance of y are $-\frac{3}{4}$, $-\frac{\sqrt{3}}{2}$ and 4 respectively, what is the variance of x? (a) $\frac{2}{\sqrt{3}}$ (b) $\frac{16}{3}$ (c) $\frac{4}{3}$ (d) 4	1 Marks	L1	CO3
29	In measuring dispersion, it is necessary to know the amount of____& the degree of_____. (a) variation, variation (b) Variation, median (c) Median, variation (d) None	1 Marks	L1	CO3
30	The degree of variation is designated as_____measure of dispersion (a) Relative (b) Absolute	1 Marks	L2	CO2

	(c) Both (d) None			
31	When it comes to comparing two or more distributions we consider (a) Absolute measures of dispersion (b) Relative measures of dispersion (c) Both (a) and (b) (d) Either (a) or (b)	1 Marks	L2	CO2
32	G.M is defined only when (a) all observations have the same sign and none is zero (b) all observations have the different sign and none is zero (c) all observations have the same sign and one is zero (d) all observations have the different sign and one is zero	1 Marks	L2	CO2
33	25% of the items of a data are less than 35 and 25% of the items are more than 75. Q.D. of the data is (a) 55 (b) 20 (c) 35 (d) 75	1 Marks	L3	CO2
34	Quartile deviation=probable error of Standard deviation (a) True (b) False (c) Both (d) None	1 Marks	L3	CO2
35	If the quartile deviation of x is 8 and $3x + 6y = 20$, then the quartile deviation of y is (a) - 4 (b) 3 (c) 5 (d) 4	1 Marks	L2	CO3
36	There are 20 points in a plane area. How many triangles can be formed by these points if 5 points are collinear? (a) 550 (b) 560 (c) 1130 (d) 1140	1 Marks	L1	CO2
37	There are 20 points in a plane area. How many triangles can be formed by these points if 5 points are collinear? (a) 550 (b) 560 (c) 1130 (d) 1140	1 Marks	L1	CO3
38	In the next world cup of cricket, there will be 12 teams divided equally into two equal groups. Team of each group will play a match against other teams of the group. From each group, 3 top teams will qualify for next round. In this round, each team will play against each other. Four top teams of this round will qualify for semi-finals and play against each other and then two top teams will go to final, where they play the best of three matches.	1 Marks	L2	CO1

	How much minimum number of matches in the next world cup will be? (a) 54 (b) 53 (c) 38 (d) 43			
39	How many ways can 5 different trophies can be arranged on a shelf if one particular trophy must always be in the middle? (a) 24 (b) 120 (c) 48 (d) 144	1 Marks	L2	CO3
40	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	1 Marks	L1	CO2
41	The first term of a GP. where second term is 2 and sum of infinite term is 8 will be (a) 6 (b) 3 (c) 4 (d) 1	1 Marks	L2	CO1
42	The number of terms of the series needed for the sum of the series $50 + 45 + 40 + \dots$ becomes zero (a) 22 (b) 21 (c) 20 (d) None	1 Marks	L2	CO1
43	Find the sum of all natural numbers between 100 and 1000 which are divisible by 11 is : (a) 44,550 (b) 66,770 (c) 55,440 (d) 33,440	1 Marks	L3	CO2
44	The 20th term of arithmetic progression whose 6th term is 38 and 10th term is 66 is..... (a) 136 (b) 118 (c) 178 (d) 210	1 Marks	L3	CO2
45	The sum of three numbers in a geometric progression is 28. When 7, 2 and 1 are subtracted from the first, second and the third numbers respectively, then the resulting numbers are in arithmetic progression. What is the sum of squares of the original three numbers? (a) 510 (b) 456 (c) 400 (d) 336	1 Marks	L3	CO2

46	For a group of 200 persons, 100 are interested in music, 70 in photography and 40 in swimming, Further more 40 are interested in both music and photography, 30 in both music and swimming, 20 in photography and swimming and 10 in all the three. How many are interested in photography but not in music and swimming ? (a) 30 (b) 15 (c) 25 (d) 20	1 Marks	L2	CO3
47	The number of sub-sets formed from the letters of the word "ALLAHABAD". (a) 128 (b) 16 (c) 32 (d) None	1 Marks	L2	CO3
48	The numbers of proper sub-sets of the set {3,4,5,6,7} is : (a) 32 (b) 31 (c) 30 (d) 25	1 Marks	L2	CO3
49	Two finite sets have m and n elements. The total number of sub-sets of the first set is 56 more than the total number of sub-sets of the second set. The values of m and n are (a) 6, 3 (b) 7, 6 (c) 5,1 (d) 8,7	1 Marks	L2	CO3
50	In a survey of 100 boys, it was found that 50 used white shirts, 40 red shirts and 30 blue shirts. 20 were habituated in using both white & red shirts. 15 were using both Red & blue and 10 were using Blue & White shirts. Find the number of boys who are using all colors. (a) 20 (b) 25 (c) 30 (d) 35	1 Marks	L2	CO3
51	Two broad divisions of probability are: (a) Subjective probability and objective probability (b) Deductive probability and mathematical probability (c) Statistical probability and mathematical probability (d) None of these	1 Marks	L2	CO3
52	Sum of all probabilities of mutually exclusive and exhaustive events is equal to (a) 0 (b) 1/2 (c) 1/4 (d) 1	1 Marks	L1	CO3
53	A bag contains 15 one rupee coins, 25 two rupee coins and 10 five rupee coins. If a coin is selected at random from the bag, then the probability of not selecting a one rupee coin is	1 Marks	L2	CO3

	(a) 0.30 (b) 0.70 (c) 0.25 (d) 0.20			
54	If there are 16 phones, 10 of them are Android and 6 of them are of Apple, then the probability of 4 randomly selected phones to include 2 Android and 2 Apple phone is (a) 0.47 (b) 0.51 (c) 0.37 (d) 0.27	1 Marks	L3	CO3
55	A machine is made of two parts A and B The manufacturing process of each part is such that probability of defective in part A is 0.08 and that B is 0.05. What is the probability that the assembled part will not have any defect? (a) 0.934 (b) 0.864 (c) 0.85 (d) 0.874	1 Marks	L1	CO1
56	If a variate X has, Mean > variance, then its distribution will be (a) Binomial (b) Poisson (c) Normal (d) t-distribution	1 Marks	L2	CO1
57	In a Normal distribution mean = 2 and variance = 4 then, 4th central moment is (a) 16 (b) 32 (c) 48 (d) 64	1 Marks	L3	CO2
58	The mean of a Binomial distribution is _____: (a) $np(1-p)$ (b) np (c) $\sqrt{np(1-p)}$ (d) None of the above	1 Marks	L1	CO2
59	If x is binomial variate with parameter 15 and $\frac{1}{3}$ what is the value of mode of the distribution (a) 5&6 (b) 5.5 (c) 5 (d) 6	1 Marks	L2	CO2
60	Which of the following is uniparametric distribution? (a) Normal (b) Poisson (c) Binomial (d) Hyper geometric	1 Marks	L3	CO2
61	The monthly income of a person in the year 2014 was ? 8,000 and CPI was 160. The CPI is 200 in the year 2017. What will be the additional dear-ness allowance for the year 2017? (a) 2400 (b) 2750 (c) 2500 (d) None	1 Marks	L1	CO2
62	The cost of living index numbers in years 2015 and 2018 were 97.5 and 115 respectively. The Salary of a worker in 2015 was `	1 Marks	L2	CO3

	19500. How much additional salary was required for him in 2018 to maintain the same standard of living as in 2015? (a) 3000 (b) 4000 (c) 3500 (d) 4500																																
63	When the prices for quantities consumed of all commodities are changing in the same ratio, then the index numbers due to Laspeyre's and Paasche's will be (a) Equal (b) Unequal (c) Reciprocal of Marshall Edge worth Index Number (d) Reciprocal of Fisher Index Number	1 Marks	L3	CO1																													
64	The weighted aggregative price index numbers for 2001 with 2000 as the base year using Marshal - Edgeworth Index Number is <table border="1"> <thead> <tr> <th rowspan="2">Commodity</th><th colspan="2">Price (in ₹)</th><th colspan="2">Quantities</th></tr> <tr> <th>2000</th><th>2001</th><th>2000</th><th>2001</th></tr> </thead> <tbody> <tr> <td>A</td><td>10</td><td>12</td><td>20</td><td>22</td></tr> <tr> <td>B</td><td>8</td><td>8</td><td>16</td><td>18</td></tr> <tr> <td>C</td><td>5</td><td>6</td><td>10</td><td>11</td></tr> <tr> <td>D</td><td>4</td><td>4</td><td>7</td><td>8</td></tr> </tbody> </table> (a) 112.26 (b) 112.20 (c) 112.32 (d) 112.38	Commodity	Price (in ₹)		Quantities		2000	2001	2000	2001	A	10	12	20	22	B	8	8	16	18	C	5	6	10	11	D	4	4	7	8	1 Marks	L1	CO2
Commodity	Price (in ₹)		Quantities																														
	2000	2001	2000	2001																													
A	10	12	20	22																													
B	8	8	16	18																													
C	5	6	10	11																													
D	4	4	7	8																													
65	Fisher's Index does not satisfy following test. (a) Unit Test (b) Time Reversal Test (c) Circular Test (d) Factor Reversal Test	1 Marks	L2	CO1																													
66	If one root of a equation is $2 + \sqrt{5}$, then the quadratic equation is : (a) $x^2 + 4x - 1 = 0$ (b) $x^2 - 4x - 1 = 0$ (c) $x^2 + 4x + 1 = 0$ (d) $x^2 - 4x + 1 = 0$	1 Marks	L3	CO3																													
67	The value of $\sqrt{6 + \sqrt{6 + \sqrt{6 + \dots \infty}}}$ is : (a) -3 (b) 2 (c) 3 (d) 4	1 Marks	L1	CO3																													
68	The sum of two numbers is 52 and their difference is 2. The numbers are (a) 17 and 15 (b) 12 and 10 (c) 27 and 25 (d) none of these	1 Marks	L2	CO3																													
69	The fourth part of a number exceeds the sixth part by 4. The	1 Marks	L3	CO1																													

	number is (a) 84 (b) 44 (c) 48 (d) none of these			
70	What is the quickest method to find correlation between two variables? (a) Scatter diagram (b) Method of concurrent deviation (c) Method of rank correlation (d) Method of product moment correlation	1 Marks	L1	CO1
71	The two lines of regression become identical when (a) $r = 1$ (b) $r = -1$ (c) $r = 0$ (d) (a) or (b)	1 Marks	L2	CO1
72	The normal curve is (a) Bell-shaped (b) U - shaped (c) J - shaped (d) Inverted J - shaped.	1 Marks	L3	CO2
73	If the 1970 index with base 1965 is 200 and 1965 index with base 1960 is 150, the index 1970 on base 1960 will be : (a) 700 (b) 300 (c) 500 (d) 600	1 Marks	L1	CO2
74	The correlation coefficient being -1 if the slope of the straight line in a scatter diagram is (a) Positive (b) negative (c) zero (d) none	1 Marks	L2	CO2
75	A box contains Rs. 56 in the form of coins of one rupee, 50 paise and 25 paise. The number of 50 paise coin is double the number of 25 paise coins and four times the numbers of one rupee coins. The numbers of 50 paise coins in the box is : (a) 64 (b) 32 (c) 16 (d) 14	1 Marks	L3	CO1

76	$7 \log \left(\frac{16}{15} \right) + 5 \log \left(\frac{25}{24} \right) + 3 \log \left(\frac{81}{80} \right)$ is equal to: (a) 0 (b) 1 (c) $\log 2$ (d) $\log 3$	1 Marks	L1	CO3
77	Fourth proportional to x, 2x, (x + 1) is : (a) (x + 2) (b) (x - 2) (c) (2x+2) (d) (2x - 2)	1 Marks	L2	CO1
78	If $2^x \times 3^y \times 5^z = 360$ Then what is the value of x, y, z ? (a) 3, 2, 1 (b) 1, 2, 3 (c) 2, 3, 1 (d) 1, 3, 2	1 Marks	L3	CO1
79	If $\log_2 x + \log_4 x = 6$, then the value of x is : (a) 16 (b) 32 (c) 64 (d) 128	1 Marks	L1	CO2
80	Find two numbers such that mean proportional between them is 18 and third proportional between them is 144 (a) 9, 36 (b) 8, 32 (c) 7, 28 (d) 6, 24	1 Marks	L2	CO1
81	The sum of all natural numbers between 100 and 1000 which are multiple of 5 is : (a) 98,450 (b) 96,450 (c) 97,450 (d) 95,450	1 Marks	L3	CO1
82	A person pays Rs. 975 in monthly installments, each installment is less than former by Rs. 5. The amount of first instalment is Rs. 100. In what time will the entire amount be paid ? (a) 26 months (b) 15 months (c) both (a) & (b) (d) 18 months	1 Marks	L1	CO1
83	Out of 20 members in a family, 11 like to take tea and 14 like coffee. Assume that each one likes atleast one of the two drinks. Find how many like both coffee and tea. (a) 2 (b) 3 (c) 4 (d) 5	1 Marks	L2	CO2

84	Let $f : R \rightarrow R$ be such that $f(x) = 2^x$, then $f(x + y)$ equals : (a) $f(x) + f(y)$ (b) $f(x) \cdot f(y)$ (c) $f(x) \div f(y)$ (d) none of these	1 Marks	L3	CO1
85	Insert 4 A.M.'s between 3 and 18 : (a) 12, 15, 9, 6 (b) 6, 9, 12, 15 (c) 9, 6, 12, 15 (d) 15, 12, 9, 6	1 Marks	L1	CO1
86	If in an A.P., t_n represents nth term. If $t_7 : t_{10} = 5 : 7$ then $t_8 : t_{11} = \underline{\hspace{2cm}}$ (a) 13 : 16 (b) 17 : 23 (c) 14 : 17 (d) 15 : 19	1 Marks	L2	CO3
87	If $f(x) = x^2 + x - 1$ and $4f(x) = f(2x)$ then find 'x'. (a) $4/3$ (b) $3/2$ (c) $-3/4$ (d) None of these	1 Marks	L3	CO2
88	In the set N of all natural numbers the relation R defined by $a R b$ "if and only if, a divide b", then the relation R is : (a) Partial order relation (b) Equivalence relation (c) Symmetric relation (d) None of these	1 Marks	L1	CO3
89	Insert two arithmetic means between 68 and 260 (a) 132, 196 (b) 130, 194 (c) 70, 258 (d) None	1 Marks	L2	CO1
90	The first term of a G.P. where second term is 2 and sum of infinite term is 8 will be (a) 6 (b) 3 (c) 4 (d) 1	1 Marks	L3	CO3
91	If $A \subset B$, then following is true (a) $A \cap B = B$ (b) $A \cup B = B$ (c) $A \cap B = A'$ (d) $A \cap B$	1 Marks	L1	CO3
92	If $A = \{1, 2, 3, 4, 5\}$, $B = \{2, 4\}$ and $C = \{1, 3, 5\}$ then $(A - C) \times B$ is (a) $\{(2, 2), (2, 4), (4, 2), (4, 4), (5, 2), (5, 4)\}$ (b) $\{(1, 2), (1, 4), (3, 2), (3, 4), (5, 2), (5, 4)\}$ (c) $\{(2, 2), (4, 2), (4, 4), (4, 5)\}$ (d) $\{(2, 2), (2, 4), (4, 2), (4, 4)\}$	1 Marks	L2	CO1
93	When the number of cases favorable to the event A is none then $P(A)$ is equal to (a) 1 (b) 0 (c) $1/2$ (d) none	1 Marks	L3	CO2

94	A card is drawn from a well-shuffled pack of playing cards. The probability that it is a spade is (a) $\frac{1}{13}$ (b) $\frac{1}{4}$ (c) $\frac{3}{13}$ (d) none	1 Marks	L1	CO1
95	Probability of the sample space is (a) 0 (b) $\frac{1}{2}$ (c) 1 (d) none	1 Marks	L2	CO3
96	Sum of all probabilities of mutually exclusive and exhaustive events is equal to (a) 0 (b) $\frac{1}{2}$ (c) $\frac{3}{4}$ (d) 1	1 Marks	L3	CO1
97	When the event is 'certain' the probability of it is (a) 0 (b) 1/2 (c) 1 (d) none	1 Marks	L1	CO1
98	The classical definition of probability is based on the feasibility at subdividing the possible outcomes of the experiments into (a) mutually exclusive and exhaustive (b) mutually exclusive and equally likely (c) exhaustive and equally likely (d) mutually exclusive, exhaustive and equally likely cases	1 Marks	L2	CO2
99	When two unbiased coins are tossed, the probability of getting both heads or both tails is (a) $\frac{1}{2}$ (b) $\frac{3}{4}$ (c) $\frac{1}{4}$ (d) none	1 Marks	L1	CO3
100	Probability of occurrence of A as well as B is denoted by (a) P(AB) (b) P(A+B) (c) P(A/B) (d) none	1 Marks	L1	CO1