



# PRESIDENCY UNIVERSITY

BENGALURU

Roll No.														
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## Mid - Term Examinations - March 2026

Date: 13-03-2026

Time: 02:00pm - 03:30pm

School: SOC/SOM-UG	Program: B.COM	
Course Code: CBS2046	Course Name: Quantitative Aptitude	
Semester: II	Max Marks: 50	Weightage: 25%

CO - Levels	CO1	CO2	CO3	CO4	CO5
Marks	26	24	-	-	-

### Instructions:

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

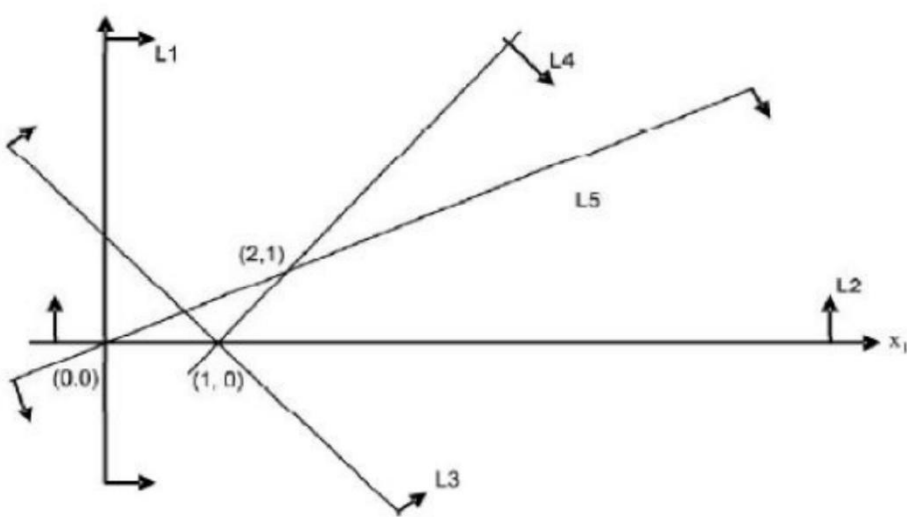
### Part A

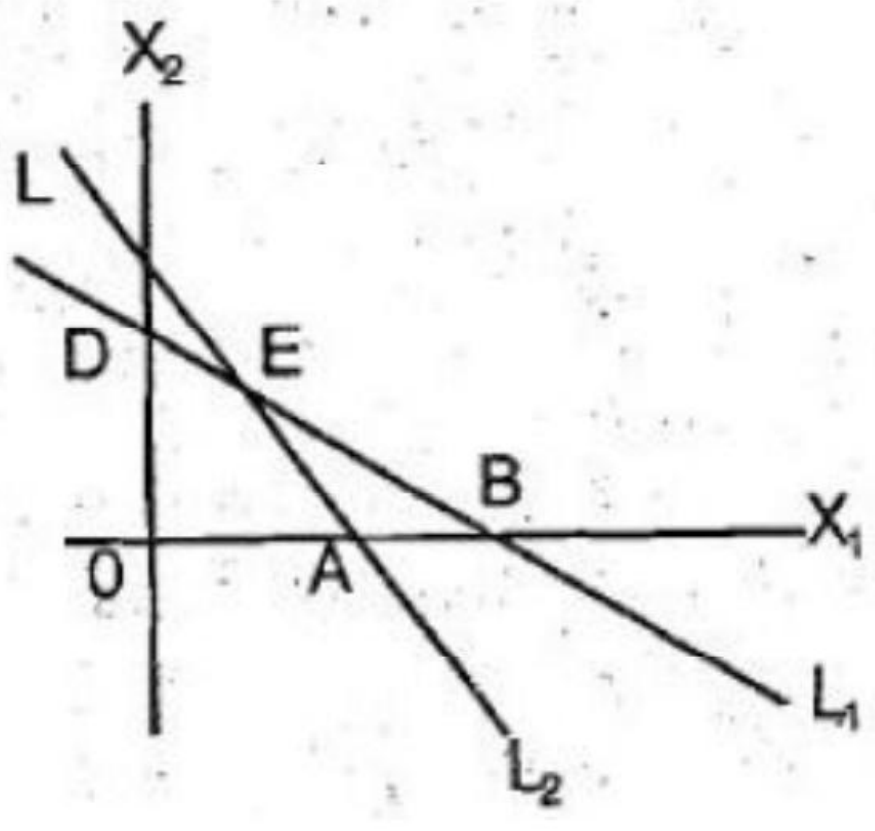
Answer ALL the Questions. Each question carries 1 mark.

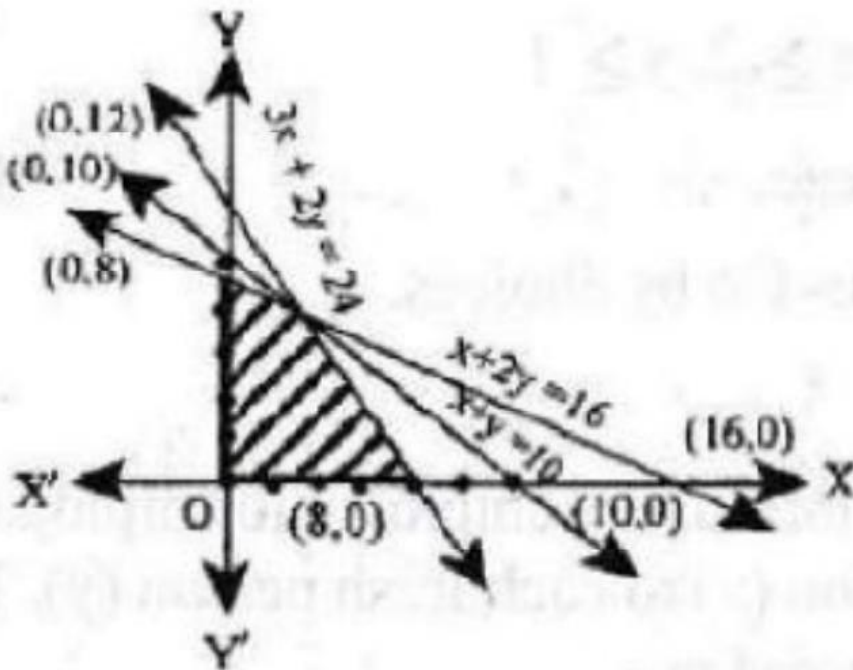
5Q x 2M=10M

1	The principal remains constant for the whole loan period in (a) Simple interest (b) compound interest (c) effective interest (d) Annuity	1 Mark	L1	CO1
2	$A = ₹5,200$ $R = 5\%$ p.a. $T = 6$ years $P(S.I)$ will be (a) ₹2,000 (b) ₹4,000 (c) ₹3,000 (d) None of these	1 Mark	L1	CO1
3	A sum of money doubles itself in 10 years. The number of years it would trebles itself is (a) 25 years (b) 15 years A (c) 20 years (d) None of these	1 Mark	L2	CO1

4	<p>Two equal amounts of money are deposited in two different banks each at 12% p.a. for 8 years and 3.5 years respectively. If the difference between their interests is ₹540, find each sum.</p> <p>(a) ₹1,200 (b) ₹1,000 (c) ₹ 1,400 (d) ₹ 1,350</p>	1 Mark	L3	CO1
5	<p>In the formula <math>A = P + I</math>, A is known as</p> <p>(a) Simple interest (b) Principal (c) Balance (d) Compound interest</p>	1 Mark	L2	CO1
6	<p>Effective rate of interest for 3% p.a. compounded monthly is - [Given that <math>(1+0.0025)^{12} = 1.0304</math>]</p> <p>(a) 3% (b) 3.02% (c) 3.04% (d) 3.01%</p>	1 Mark	L2	CO1
7	<p>Mr. Paul borrows ₹25,000 on condition to repay it with C.I. at 7% p.a. in annual installments of ₹3,000 each. The number of years for the debt to be paid off is</p> <p>(a) 10 years (b) 12 years (c) 11 years (d) 13 years</p>	1 Mark	L3	CO1
8	<p>Johnson Leo ₹ 1,00,000 with the direction that it should be divided in such a way that his minor sons Tom Dick and Harry aged 9, 12 and 15 years should each received equally after attaining the age 25 years. The rate of interest being 3.5% how much each son receives after getting 25 years old?</p> <p>(a) ₹ 50,000 (b) ₹ 51,994 (c) ₹ 52,000 (d) None</p>	1 Mark	L3	CO1
9	<p>In_____ first payment/receipt takes place at the end of first period.</p> <p>(a) Annuity immediate (b) Annuity regular (c) Annuity due (d) Annuity special</p>	1 Mark	L2	CO1
10	<p>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 commencing now at 3% compound interest p.a. how much should he invest annually?</p>	1 Mark	L2	CO1

	(a) ₹84,448 (b) ₹84,450 (c) ₹84,449 (d) ₹84,077			
11	Interest computed on the principal for the entire period of borrowing is called - (a) Simple Interest (b) Compound Interest (c) Balance (d) All of the above	1 Mark	L1	CO1
12	On solving the inequalities $2x + 5y < 20$ , $3x + 2y < 12$ , $x < 0$ , $y < 0$ , we get the following situation (a) (0, 0), (0, 4), (4, 0) and (20/11, 36/11) (b) (0, 0), (10, 0), (0, 6) and (20/11, 36/11) (c) (0, 0), (0, 4), (4, 0) and (2, 4) (d) (0, 0), (10, 0), (0, 6) and (2, 3)	1 Mark	L1	CO1
13	The common region indicated on the graph is expressed by the set of five inequalities  (a) L1: $x_1 \geq 0$ L2: $x_2 \geq 0$ L3: $x_1 + x_2 \leq 1$ L4: $x_1 - x_2 \geq 1$ L5: $-x_1 + 2x_2 \leq 0$ (b) L1: $x_1 \geq 0$ L2: $x_2 \geq 0$ L3: $x_1 + x_2 \geq 1$ L4: $x_1 - x_2 \geq 1$ L5: $-x_1 + 2x_2 \leq 0$ (c) L1: $x_1 \leq 0$ L2: $x_2 \leq 0$ L3: $x_1 + x_2 \geq 1$ L4: $x_1 - x_2 \geq 1$ L5: $-x_1 + 2x_2 \leq 0$ (d) None of these	1 Mark	L1	CO1
14	A company produces two products A and B, each of which requires processing in two machines. The first machine can be used at most for 60 hours; the second machine can be used at most for 40 hours. The product A requires 2 hours on machine one and one hour on machine two. The product B requires one hour on machine one and two hours	1 Mark	L2	CO1

	<p>on machine two. Express above situation using linear inequalities.</p> <p>(a) <math>2x + y &lt; 60</math> and <math>x + 2y &lt; 40</math> and <math>x &gt; 0, y &gt; 0</math>.</p> <p>(b) <math>2x + y &gt; 60</math> and <math>x + 2y &gt; 2</math> and <math>x &gt; 0, y &gt; 0</math>.</p> <p>(c) <math>2x + y &lt; 60</math> and <math>x + 2y &lt; 2</math> and <math>x &gt; 0, y &gt; 0</math>.</p> <p>(d) <math>2x + y &gt; 60</math> and <math>x + 2y &lt; 2</math> and <math>x &gt; 0, y &gt; 0</math>.</p>			
15	<p>The solution space of the inequalities <math>2x + y &lt; 10</math> and <math>x - y &lt; 5</math> :</p> <p>(i) Includes origin</p> <p>(ii) Includes the point (4,3)</p> <p>Which one is correct?</p> <p>(a) Only (i)                      (b) only (ii)</p> <p>(c) Both (i) &amp; (ii)              (d) None</p>	1 Mark	L3	CO1
16	<p>The common region represented by the following in equalities  <math>L_1: x_1 + x_2 &lt; 4</math>; <math>L_2: 2x_1 - x_2 &gt; 6</math></p>  <p>(a) OABC              (b) outside of OAB</p> <p>(c) BCE              (d) ABE</p>	1 Mark	L2	CO1
17	The shaded region represents:	1 Mark	L2	CO1



- (a)  $3x + 2y < 24, x + 2y > 16, x + y < 10, x > 0, y > 0$   
 (b)  $3x + 2y < 24, x + 2y < 16, x + y > 10, x > 0, y > 0$   
 (c)  $3x + 2y < 24, x + 2y < 16, x + y < 10, x > 0, y > 0$   
 (d) None of these.

18

- The inequalities  $x > 0, y > 0$  indicates  
 (a) First quadrant (b) Second quadrant  
 (c) Third quadrant (d) Fourth quadrant

1 Mark

L1

CO1

19

A factory manufactures two articles X and Y. To manufacture article X, a certain machine has to be worked for 1.5 hours and in addition, a craftsman has to work for 2 hours. To manufacture the article Y, the machine has to be worked for 2.5 hours and in addition, the craftsman has to work for 1.5 hours. In a week, the factory can avail of 80 hours of machine and 70 hours of the craftsman's time. Let x units of article X and y units of article Y be produced, then the constraints are :

- (a)  $1.5x + 2.5y > 80$   
 $2x + 1.5y < 70$   
 $x > 0; y > 0$   
 (b)  $1.5x + 2.5y < 80$   
 $2x + 1.5y < 70$   
 $x > 0; y > 0$   
 (c)  $1.5x + 2.5y < 80$   
 $2x + 1.5y > 70$   
 $x > 0; y > 0$   
 (d) None of these.

1 Mark

L2

CO1

20	<p>The product of two numbers is 3200 and the quotient when the larger number is divided by the smaller is 2. The numbers are</p> <p>a) (16, 200)    b) (160, 20)</p> <p>c) (60, 30)    d) (80, 40)</p>	1 Mark	L1	CO1
21	<p>The diagonal of a rectangle is 5 cm and one of its sides is 4 cm. Its area is</p> <p>a) 20 sq.cm.    b) 12 sq.cm.</p> <p>c) 10 sq.cm.    d) none of these</p>	1 Mark	L2	CO1
22	<p>If one root of <math>5x^2 + 13x + p = 0</math> be reciprocal of the other then the value of p is</p> <p>a) -5            b) 5</p> <p>c) 1/5            d) -1/5</p>	1 Mark	L1	CO1
23	<p>The values of x satisfying the equation</p> $\sqrt{(2x^2+5x-2)} - \sqrt{(2x^2+5x-9)} = 1$ are <p>a) (2, -9/2)    b) (4, -9)</p> <p>c) (2, 9/2)    d) (-2, 9/2)</p>	1 Mark	L2	CO1
24	<p>A streamer goes downstream from one part to another in 4 hours. It covers the same distance upstream in 5 hours. If the speed of the stream be 2 km per hour, find the distance between the two parts.</p> <p>(a) 60 km.    (b) 80 km</p> <p>(c) 70 km    (d) 55 km</p>	1 Mark	L3	CO1
25	<p>In an election for a corporation seat, there were two candidates. A total of 9791 votes were polled, 116 votes were declared invalid. The successful candidate got 5 votes for every 4 votes his opponent had. By what margin did the successful candidate win?</p> <p>(a) 1175 votes    (b) 1050 votes</p> <p>(c) 1075 votes    (d) 1250 votes</p>	1 Mark	L4	CO1

26	<p>The solution of the set of equations <math>3x + 4y = 7</math>, <math>4x - y = 3</math> is</p> <p>a) (1, -1)      b) (1, 1)</p> <p>c) (2, 1)      d) (1, -2)</p>	1 Mark	L2	CO1
27	<p>What is the modal value for the numbers 5, 8, 6, 4, 10, 15, 18, 10?</p> <p>(a) 18      (b) 10</p> <p>(c) 14      (d) None of these</p>	1 Mark	L1	CO2
28	<p>What is the median for the following observations?</p> <p>5, 8, 6, 9, 11, 4.</p> <p>(a) 6      (b) 7      (c) 8      (d) None of these</p>	1 Mark	L1	CO2
29	<p>The third decile for the numbers 15, 10, 20, 25, 18, 11, 9, 12 is</p> <p>(a) 13      (b) 10.70</p> <p>(c) 11      (d) 11.50</p>	1 Mark	L1	CO2
30	<p>Which of the following statements is wrong?</p> <p>(a) Mean is rigidly defined</p> <p>(b) Mean is not affected due to sampling fluctuations</p> <p>(c) Mean has some mathematical properties</p> <p>(d) All these</p>	1 Mark	L2	CO2
31	<p>While computing the AM from a grouped frequency distribution, we assume that</p> <p>(a) The classes are of equal length</p> <p>(b) The classes have equal frequency</p> <p>(c) All the values of a class are equal to the mid-value of that class</p> <p>(d) None of these.</p>	1 Mark	L2	CO2
32	<p>Measures of central tendency for a given set of observations measures</p> <p>(a) The sauternes of the observations</p> <p>(b) The central location of the observations</p>	1 Mark	L2	CO2

	(c) Both (a) and (b) (d) None of these.			
33	If GM of x is 10 and GM of y is 15, then the GM of xy is  (a) 150      (b) $\log 10 \times \log 15$  (c) $\log 150$ (d) None of these.	1 Mark	L3	CO2
34	The average salary of a group of unskilled workers is 10,000 and that of a group of skilled workers is 15,000. If the combined salary is 12,000, then what is the percentage of skilled workers?  (a) 40%      (b) 50%  (c) 60%      (d) none of these	1 Mark	L3	CO2
35	Laspeyre's and Paasche's method _____ time reversal test  (a) satisfy      (b) do not satisfy (c) are              (d) are not	1 Mark	L2	CO2
36	The number of test of Adequacy is  (a) 2    (b) 5  (c) 3    (d) 4	1 Mark	L1	CO2
37	Index numbers show _____ changes rather than absolute amounts of change.  (a) relative    (b) percentage  (c) both        (d) none	1 Mark	L1	CO2
38	Factor Reversal test is satisfied by  (a) Fisher's Ideal Index      (b) Laspeyres Index  (c) Paasches Index          (d) none	1 Mark	L2	CO2
39	The index number is a special type of average  (a) false      (b) true  (c) both      (d) none	1 Mark	L2	CO2
40	Laspeyre's or Paasche's or the Fisher's ideal index do not satisfy  (a) Time Reversal Test      (b) Unit Test  (c) Circular Test              (d) none	1 Mark	L1	CO2
41	_____ play a very important part in the construction of index	1 Mark	L2	CO2

	<p>numbers.</p> <p>(a) weights (b) classes</p> <p>(c) estimations (d) none</p>			
42	<p>_____ is an extension of time reversal test</p> <p>(a) Factor Reversal test (b) Circular test</p> <p>(c) both (d) none</p>	1 Mark	L2	CO2
43	<p>If <math>P(A \cup B) = 1</math> for two events A and B, then A and B called ..... Events.</p> <p>(a) Dependent events (b) mutually exclusive events</p> <p>(c) Equally likely events (d) exhaustive events</p>	1 Mark	L3	CO2
44	<p>If <math>P(A) = 3/8</math>, then the odds against the event A is</p> <p>(a) 5 : 4 (b) 3 : 4</p> <p>(c) 5 : 3 (d) None</p>	1 Mark	L3	CO2
45	<p>If A denotes that a student is preparing for CA foundation and B denotes that the he plays tennis.</p> <p>(a) <math>P(A \cap B) = 0</math> (b) <math>P(A \cap B) = 1</math></p> <p>(c) <math>P(A \cup B) = 1</math> (d) <math>P(A) = P(B)</math></p>	1 Mark	L3	CO2
46	<p>There are 15 two rupee coins, 25 five rupee coins and 10 ten rupee coins in a bowl. If a coin is selected at random from the bowl, then the probability of not selecting a ten rupee coin is</p> <p>(a) 0.20 (b) 0.80</p> <p>(c) 0.75 (d) None</p>	1 Marks	L2	CO2
47	<p>A, B, C are three mutually independent events with probabilities 0.5, 0.2 and 0.4 respectively, what is <math>P(A \cap B \cap C)</math> ?</p> <p>(a) 0.4 (b) 0.24</p> <p>(c) 0.04 (d) None</p>	1 Mark	L2	CO2
48	<p>If two letters are selected at random from the word HOME, what is the probability that none of the letters would be consonants ?</p>	1 Mark	L2	CO2

	(a) 1/4      (b) 1/6 (c) 1/5      (d) None			
<b>49</b>	If all the values taken by a random variable are equal then (a) its standard deviation is positive (b) its expected value is zero (c) its standard deviation is zero (d) its standard deviation is a real number	<b>1 Mark</b>	<b>L2</b>	<b>CO2</b>
<b>50</b>	A, B, C are three mutually independent events with probabilities 0.5, 0.2 and 0.4 respectively, what is $P(A \cap B \cap C)$ ? (a) 0.4      (b) 0.24      (c) 0.04      (d) None	<b>1 Mark</b>	<b>L2</b>	<b>CO2</b>