



**Avinashilingam Institute for Home Science and Higher Education for Women**  
Deemed to be University Estd. u/s 3 of UGC Act 1956, Category 'A' by MHRD (now MoE)  
Re-accredited with 'A++' Grade by NAAC. CGPA 3.65/4, category I by UGC  
Coimbatore - 641 043, Tamil Nadu, India.

**Continuous Internal Assessment Test I – August 2025**  
**I Semester**

Class : I UG  
Major : B.Com (PA)

Time : 2 Hours  
Max. Marks : 60

**23BCPC03 - Business Mathematics and Logical Reasoning and Statistics**

- CO1 : Apply the Logarithm Techniques and its Mathematical Equation for Business  
CO2 : Prepare the Permutation and Combination Sequences Series for Business Situations  
CO3 : Acquire the Logical Reasoning and Syllogism Skill Sets  
CO4 : Apply Statistical Techniques for Data Analysis and Interpretations  
CO5 : Application of Correlation and Regression Techniques in Business Decision Making

**Part – A**

6 x 1 = 6

**Choose the correct answer**

- The ratio compounded of 2:3, 9:4, 5:6 and 8:10 is  
(a) 1:1 (b) 1:5 (c) 3:8 (d) 4:8 CO1 K2
- If  $x/y = z/w$ , implies  $y/x = w/z$ , then the process is called  
(a) Dividendo (b) Componendo (c) Alternendo (d) Invertendo CO2 K3
- $\log_2 8$  is equal to  
(a) 2 (b) 8 (c) 3 (d) 16 CO3 K4
- If  $x:y = 2:3$ , then  $(5x+2y):(3-y) =$   
(a) 19:3 (b) 16:3 (c) 7:2 (d) 7:3 CO3 K2
- The equation  $-7x + 1 = 5 - 3x$  will satisfied for x equal to  
(a) 2 (b) -1 (c) 1 (d) 3 CO3 K2
- The values of x and y satisfying the equation  $x/y + y/3 = 2$ ,  $x+2y = 8$  are given by pair  
(a) (3, 2) (b) (-2, -3) (c) (2, 3) (d) (1, -2) CO3 K2

**Part B**

3 x 6 = 18

**Answer the following**

**Answer should not exceed 400 words**

- (a) Define Ratios and Proportions. CO1 K2  
Or  
(b) If  $a : b = c : d = 2.5 : 1.5$ , what are the values of  $ad : bc$  and  $a + c : b + d$  ? CO2 K2
- (a) Write a note on Law of Indices. CO3 K2  
Or  
(b) Prove that  $\frac{\log_3 8}{\log_9 16 \log_4 10} = 3 \log_{10} 2$  CO1 K2
- (a) If thrice of 'A' age 6 years ago be subtracted from twice his present age, the result would be equal to his present age. Find A's present age. CO3 K2  
Or  
(b) Find the 7<sup>th</sup> term of the A.P. 8, 5, 2, -1, -4,..... CO3 K2

**Part – C**

3 x 12 = 36

**Answer the following**

**Answer should not exceed 800 words**

- (a) Examine the nature of the roots of the following equations CO3 K2  
(i)  $x^2 - 8x + 16 = 0$  (ii)  $3x^2 - 8x + 4 = 0$   
(iii)  $5x^2 - 4x + 2 = 0$  (iv)  $2x^2 - 6x - 3 = 0$ .  
Or  
(b) Explain the methods of Simultaneous Linear Equations with Examples CO3 K3
- (a) Draw the graphs of the following Linear Inequalities: CO2 K2  
Max.  $Z = 8x_1 + 5x_2$   
 $2x_1 + x_2 \leq 500$ ,  $x_1 \leq 150$ ,  $x_2 \leq 250$ ,  $x \geq 0$   
Or  
(b) If  ${}^{56}P_{r+6} : {}^{54}P_{r+3} = 30,800 : 1$ , Find r. CO3 K2
- (a) A box contains 7 red, 6 white and 4 blue balls. How many selections of three balls can be made so that (i) all three are red (ii) none is red (iii) one is of each colour CO3 K3  
Or  
(b) Find the sum to n terms of the Series  $0.7 + 0.77 + 0.777 + \dots$  to n terms CO3 K2