Manirank.

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. Recognised by UGC Under Section 12B
Coimbatore – 641 043, Tamil Nadu, India
Continuous Internal Assessment Test I – August, 2024
I Semester

Class : I UG **Time : 2 Hours**
Major : B.Com (PA) **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

1. The ratio compounded of 2:3, 9:4, 5:6 and8:10 is **CO1 K2**
   (a) 1:1 (b) 1:5 (c) 3:8 (d) None of theses
2. The Fourth proportional to 2a, a, c is: **CO2 K3**
   (a) ac/2 (b) ac (c) 2/ac (d) None of these
3. The logarithm of 64 to the base $2\sqrt{2}$ is **CO3 K4**
   (a) 2 (b) $\sqrt{2}$ (c) 1/2 (d) 2/1
4. Solving the equation $x^2 - 24x + 135 = 0$ are, values(s) of x **CO3 K2**
   (a) 9,6 (b) 9,15 (c) 15,6 (d) None
5. The simultaneous equations $7x - 3y = 31$, $9x - 5y = 41$ have solution given by **CO4 K2**
   (a) (– 4, –1) (b) (–1, 4) (c) (4, –1) (d) (3, 7)
6. The value of $2(256)^{1/3}$ is **CO3 K2**
   (a) 1 (b) 2 (c) 1/2 (d) 2/1

Part- B **3x6=18**
Answer ALL Questions
Each answer should not exceed 400 words or two pages

7. (a) Define Ratios and Proportions. **CO1 K2**
   Or
   (b) If m : n = o : p = 2.5 : 1.5, what are the values of mp : no and m + o : n + p ? **CO2 K2**
8. (a) Write a note on Law 1 and Law 2 of Indices. **CO3 K2**
   Or
   (b) If $a=\log_{24} 12$, $b=\log_{36} 24$ and $c=\log_{48} 36$, then Prove that $1+abc = 2bc$ **CO4 K2**
9. (a) The age of a man is three times the sum of the ages of his two sons and 5 years hence his age will be double the sum of their ages. Find the present age of the man? **CO3 K2**
   Or
   (b) Find the (a) 9! / 6!; 10! / 7! and (b) Find x if 1/9 ! + 1/10 ! = x/11 ! **CO4 K2**

Part – C **3 x 12= 36**
Answer the following
Answer should not exceed 800 words or four pages

10. (a) Explain the methods of Simultaneous Linear Equations with Examples **CO3 K3**
    Or
    (b) Solve $2^{x-3}+2^{3-x} = 3$ **CO3 K2**

11. (a) Draw the graphs of the following Linear Inequalities: **CO4 K2**
    $5x + 8y \leq 2000$, $x \leq 175$, $x \geq 0$
    $7x + 4y \leq 1400$, $y \leq 225$, $y \geq 0$
    Or
    (b) If ${}^nP_7 : {}^nP_8 = 4:1$, Find the value of n. **CO3 K2**

12. (a) A committee is to be formed of 3 combinations out of 12. Find the number of ways of forming such a committee **CO3 K3**
    Or
    (b) Find the sum to n terms of the Series **CO4 K2**
    6 +66 + 666 +.....

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