MANAGEMENT DEVELOPMENT INSTITUTE OF SINGAPORE IN TASHKENT

Course	: **Foundation Year (MFYC07)**
Module Title	: **Mathematics**
Module Leader	: **Mr Tan Chee Kian**
Assessment	: **Assignment 1**
Due Date	: **10 March 2024**
Weighting within Module	: **10%**

Instructions:

1. This paper consists of **TWO (2)** pages including this cover page.

2. Answer **ALL** questions.

3. Write legibly and show all step-by-step workings clearly in the answers.

4. Submit the assignment online by **PDF** file only**.**

5. **DO NOT** include the question paper and any Table of Contents in the submission (**10** marks will be deducted if the student does so).

6. Unless stated otherwise, all answers are to be corrected to **two (2) decimal places**.

7. The **Total Marks** of this assignment are **100**.

Answer ALL questions [Total: 100 marks]

Question 1 [30 marks]

(a) Evaluate $5(2x + 7) - 3(3x + 11) = 4$. [6 marks]

(b) Evaluate $\frac{3}{7x+1} - \frac{1}{3x-1} = 0$. [6 marks]

(c) Solve $(3x + 4)(2x - 7) = 5x^2 - 8x - 34$. [9 marks]

(d) Factorize $4x^2 - 25$ and $2x^2 - x - 15$ to write $\frac{4x^2-25}{2x^2-x-15}$ in lowest terms. [9 marks]

Question 2 [30 marks]

(a) Solve this system of linear equations: [15 marks]

$$4x - 3y = 14$$
$$3x + 5y = 25$$

(b) Given that $A = \begin{bmatrix} -2 & 3 \\ 5 & 7 \\ 4 & -6 \end{bmatrix}$ and $B = \begin{bmatrix} 3 & -7 & 6 \\ 4 & 2 & -5 \end{bmatrix}$, find $A \times B$. [15 marks]

Question 3 [40 marks]

(a) The coordinates of A and B are (2, 9) and (5, 11), respectively. Derive an equation of AB in slope-intercept form. [10 marks]

(b) Find the equation of the line in slope-intercept form that passes through the point (14, 6) and is parallel to the line $2y + 5 = 3x$. [10 marks]

(c) Find the equation of the line in slope-intercept form that passes through the point $(15, -11)$ and is perpendicular to the line $3y + 5x = 12$. [10 marks]

(d) Find the coordinates of the intersection point of these two lines: $2y - x = 8$ and $5y + 2x = 65$. [10 marks]

END OF PAPER