ACADEMIC YEAR 2023 – 2024

Program	Term	Semester	Paper
FOUNDATION	2	2	MAIN 1

MODULE NAME:	BASIC MATHEMATICS I		
MODULE CODE:	FMTH003	EXAM DATE:	22/07/2024
TEACHER'S NAME:	KHALOUD AL AJMI	DURATION:	2 hrs.

Questions to be answered on:	Allowed requirements	Number of pages
Space provided on the question paper	Pen Pencil (only for drawing)	(Incl. Cover Page): 08

Points of Attention:

- For each question, the maximum earned points are mentioned between brackets at the end of each question.
- Write very clearly! Answers that are not readable are not marked and don't get points!
- Make sure your answers are written to the point.
- All answers must be written **in English**.
- Write all the answers **in blue or black pen only**.
- When finished, submit the question paper, together with the answer scripts and the signed cover page to the invigilator.
- Any cheating/copying may fail the examination.

STUDENT NAME:	
STUDENT ID:	
CLASS:	

FINAL MARKS
40

Number of answer scripts: ……

Invigilator: ……

Student's signature: ……

Time of receipt: ……

Question 1 [4 Marks]

A room temperature is usually considered to be 25°C. Express this temperature in °F.

Question 2 [6 Marks]

Simplify the following expression and eliminate any negative exponents.

a. $\dfrac{b^{7/3}\, b^{2/3}}{b^{1/3}}$ (3 marks)

b. $(16b)^{1/2}(b^{-3/2})$ (3 marks)

Question 3 [6 Marks]

Find the quotient and remainder of the expression given below by using synthetic division.

$$\frac{x^3+2x^2+2x+1}{x+2}$$

Question 4 [6 Marks]

Factor the following expressions completely

a. $36 - 4y^2$ (3 marks)

b. $x^2 + 6x + 9$ (3 marks)

Question 5 [7 Marks]

Find the indicated set if if $U = \{1, 2, 3, \dots, 10\}$ $A = \{3, 4, 5, 6, 7, 9\}$, $B = \{2, 6, 8\}$ and $C = \{1,2,3,4,5\}$.

a. $C' \cup B$ (4 marks)

b. $A \cap B$ (3 marks)

Question 6 [6 Marks]

Find all real solutions of the equations given below.

a. $\sqrt{8x-1}=3$ (3 marks)

b. $2x+3=7-3x$ (3 marks)

Question 7 [5 Marks]

The volume of a cardboard milk container is $2500\ cm^3$. How many liters of milk does that carton hold?

Units Conversion Table

$1\ km = 1000\ m$	$1\ m = 100\ cm$
$1\ cm = 10\ mm$	$1\ kg = 1000\ g$
$1\ g = 1000\ mg$	$1\ l = 1000\ ml$
$1\ tonne = 1000kg$	$1\ cm^3 = 1\ ml$
$1\ foot = 12\ inches$	$1\ yard = 3\ feet$
$1\ mile = 1760\ yards$	$1\ gallon = 8\ pints$
$F = \frac{9}{5}\ C + 32$	$C = \frac{5}{9}(F - 32)$

References:

Larson, R. and Hostetler, R. (2007) *Precalculus*. 7th edn. Boston: Houghton Mifflin Company.

Stewart, J., Redlin, L. and Watson, S. (2017) *Precalculus Mathematics for Calculus*. 7th edn. Cengage.

MLO & Bloom's Level of Complexity FMTH003

Q #	MLO Addressed	Complexity Level	Mark	Remark
1	**1,2**	Understanding/ Evaluating	**4**	
2	**4**	Understanding/ Evaluating	**6**	
3	**6**	Evaluating	**6**	
4	**5,3**	Evaluating	**6**	
5	**2**	Understanding/ Evaluating	**7**	
6	**4**	Applying/ Evaluating	**6**	
7	**6**	Evaluating	**5**	