الجامعة الوطنية
National University
Science & Technology للعلوم والتكنولوجيا
كلية عمان البحرية الدولية
International Maritime College Oman

ACADEMIC YEAR 2023 - 2024

Program	Semester	Term	Paper
FOUNDATION	1	2	MIDTERM

MODULE NAME:	**BASIC MATHEMATICS I**		
MODULE CODE:	**FMTH003**	**EXAM DATE:**	**03/01/2024**
INSTRUCTOR's NAME:	**Dr Taofeek**	**DURATION:**	**1 hr 30mins**

Questions to be answered on:	**Allowed tools:**	**Number of pages**
✓ Space provided on the question paper	Pen, Pencil & Calculator	(Incl. cover page): **07**

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.
- Cheating / copying is not allowed and will result in failing the exam.

		FINAL MARKS
STUDENT NAME:		
STUDENT ID:		**20**
CLASS:		

Number of answer scripts:……..…….. **Invigilator:**……..……..…..

Student's signature: …… **Time of receipt:**……..…..

Question 1 [2 Marks]

The cardboard milk container has a volume of $2500cm^3$. What is the equivalent amount of milk in litres that the carton can hold?

Question 2 [4 Marks]

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

a. $B' \cap C$ (2 marks)

b. $(A' \cup B) \cup C$ (2 marks)

Question 3 [3 Marks]

Simplify the following expression given below and eliminate any negative exponents.

$$(3a^4b^{-2})^3(a^2b^{-1})$$

Question 4 [4 Marks]

Express the following repeating decimal given below as a fraction.

a. $5.\overline{23}$ (2 marks)

b. $1.3\overline{7}$ (2 marks)

Question 5 [3 Marks]

Evaluate the expression given below.

$$1+\frac{5}{8}-\frac{1}{6}$$

Question 6 [4 Marks]

The speed of light is about 300,000 km/s. Given that the distance from the earth to the sun is about 1.5×10^8 km, calculate the time required for a light ray to travel from the Sun to the Earth?

Formula Sheet

Units Conversion Table

$1\ km = 1000m$	$1\ m = 100cm$
$1\ cm = 10mm$	$1\ kg = 1000g$
$1\ g = 1000mg$	$1\ l = 1000\ ml$
$1\ tonne\ =\ 1000\ kg$	$1\ cm^3 = 1\ ml$
$1\ foot = 12\ inches$	$1\ litre =\ 1000\ cm^3$

MLO & Bloom's Level of Complexity

Q #	MLO Addressed	Complexity Level	Mark	Remark
1		Application	**2**	Expect 90% to solve
2		Analyse	**4**	75% students can solve
3		Analyse	**3**	Expect 100% to solve
4		Understanding /Analyse	**4**	Expect 80% to solve
5		Understanding	**3**	Expect 80% to solve
6		Application	**4**	Expect 100% to solve

References:

Barnett, R. *et al.* (2011) *College Algebra with Trigonometry*. 9th edn. New york: Mcgraw Hill.
Stewart, J., Redlin, L. and Watson, S. (2017) *Precalculus Mathematics for Calculus*. 7th edn. Cengage.