EXAM-STYLE CLASS TEST

MARKS	DURATION	QUESTIONS
35	55 minutes	3

Name: _____ Class: _____

Date: _____

MARK ____ / 35

INSTRUCTIONS AND INFORMATION

1. Answer **ALL** the questions in this question paper.
2. Answer QUESTION 1 by **circling** the letter (A–D) in the answer grid at the end of that section.
3. Show **ALL** calculations clearly.
4. Show all units where applicable.
5. Number the answers correctly according to the numbering system used in this question paper.
6. A non-programmable calculator may be used, unless stated otherwise.
7. Write neatly and legibly.

QUESTION 1 [10 MARKS]

Four options are given as possible answers to the following questions. Choose the correct answer and circle the letter (A–D) in the grid at the end of this section. If you want to change your choice, put a cross through the wrong letter and circle your new choice.

1.1 $\sin^2\theta + \cos^2\theta = \ldots$ (1)

A) 0 **B)** 1

C) 2 **D)** $\sin\theta + \cos\theta$

1.2 $\tan\theta = \ldots$ (1)

A) $\frac{1}{\sin\theta}$ **B)** $\frac{\cos\theta}{\sin\theta}$

C) $\sin\theta \times \cos\theta$ **D)** $\frac{\sin\theta}{\cos\theta}$

1.3 $\sin(180° - \theta) = \ldots$ (1)

A) $\sin\theta$ **B)** $-\cos\theta$

C) $-\sin\theta$ **D)** $\cos\theta$

1.4 $\cos(180° + \theta) = \ldots$ (1)

A) $\cos\theta$ **B)** $-\sin\theta$

C) $-\cos\theta$ **D)** $\sin\theta$

1.5 $\tan(360° - \theta) = \ldots$ (1)

A) $\cot\theta$ **B)** $-\cot\theta$

C) $-\tan\theta$ **D)** $\tan\theta$

1.6 $\sin(90° - \theta) = \ldots$ (1)

A) $-\sin\theta$ **B)** $\sin\theta$

C) $-\cos\theta$ **D)** $\cos\theta$

1.7 $\cos(-\theta) = \ldots$ (1)

A) $\cos\theta$ **B)** $\sin\theta$

C) $-\sin\theta$ **D)** $-\cos\theta$

1.8 Simplify $\frac{1 - \cos^2\theta}{\sin\theta}$, given $\sin\theta \neq 0$. (1)

A) 1 **B)** $\tan\theta$

C) $\cos\theta$ **D)** $\sin\theta$

1.9 $\sin 150°$ in exact form is ... (1)

A) $\frac{-1}{2}$ **B)** $\frac{1}{2}$

C) $\frac{-\sqrt{3}}{2}$ **D)** $\frac{\sqrt{3}}{2}$

1.10 Simplify $\frac{\sin\theta \times \cos\theta}{\tan\theta}$. (1)

A) $\sin^2\theta$ **B)** $\cos^2\theta$

C) 1 **D)** $\cos\theta$

ANSWER GRID — CIRCLE YOUR ANSWERS FOR QUESTION 1

1.1	A	B	C	D
1.2	A	B	C	D
1.3	A	B	C	D
1.4	A	B	C	D
1.5	A	B	C	D
1.6	A	B	C	D
1.7	A	B	C	D
1.8	A	B	C	D
1.9	A	B	C	D
1.10	A	B	C	D

QUESTION 2 [11 MARKS]

Answer the questions below WITHOUT the use of a calculator.

2.1 Simplify fully: $\sin(90° - x)\cdot\cos(180° + x) + \tan x\cdot\cos x\cdot\sin(x - 180°)$ **(6)**

2.2 If $-3\sin\theta - 2 = 0$ and $\theta \in [0° ; 270°]$, use a SKETCH in the correct quadrant to determine the value of $1 + \tan^2\theta$. **(5)**

QUESTION 3 [14 MARKS]

If $\cos 75° = k$, express each of the following in terms of k. Show ALL your working.

3.1 $\cos 105°$ **(3)**

3.2 $\sin 15°$ **(3)**

3.3 tan 15° **(4)**

3.4 Prove the identity: $\frac{1-\cos^2\theta}{\sin\theta\cdot\cos\theta} = \tan\theta$ **(4)**

TOTAL: 35 marks

This question paper consists of 3 questions.

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