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 $\sin(A + B) = \ldots$ (1)

A) $\sin A \cos B + \cos A \sin B$
B) $\cos A \cos B - \sin A \sin B$
C) $\sin A + \sin B$
D) $\sin A \cos B - \cos A \sin B$

1.2 $\cos(A + B) = \ldots$ (1)

A) $\cos A \cos B + \sin A \sin B$
B) $\cos A + \cos B$
C) $\cos A \cos B - \sin A \sin B$
D) $\sin A \cos B + \cos A \sin B$

1.3 $\sin 2\theta = \ldots$ (1)

A) $\sin \theta + \cos \theta$
B) $\sin^2\theta + \cos^2\theta$
C) $2 \sin \theta \cos \theta$
D) $2 \sin \theta$

1.4 Which is NOT one of the three forms of $\cos 2\theta$? (1)

A) $2 \sin^2\theta - 1$
B) $\cos^2\theta - \sin^2\theta$
C) $1 - 2 \sin^2\theta$
D) $2 \cos^2\theta - 1$

1.5 Using the double-angle formula on $30°$, $\sin 60° = \ldots$ (1)

A) $\frac{\sqrt{3}}{4}$
B) 1
C) $\frac{1}{2}$
D) $\frac{\sqrt{3}}{2}$

1.6 cos 2θ written in terms of cos θ only is ... (1)

A) $1 - 2\cos^2\theta$ **B)** $2\cos^2\theta + 1$

C) $\cos^2\theta - 1$ **D)** $2\cos^2\theta - 1$

1.7 If $\sin\theta = \frac{3}{5}$ and θ is acute, then $\sin 2\theta = \ldots$ (1)

A) $\frac{6}{5}$ **B)** $\frac{24}{25}$

C) $\frac{12}{25}$ **D)** $\frac{7}{25}$

1.8 For that same θ, $\cos 2\theta = \ldots$ (1)

A) $\frac{7}{25}$ **B)** $\frac{16}{25}$

C) $\frac{24}{25}$ **D)** $\frac{-7}{25}$

1.9 sin $75°$ written as a compound angle is ... (1)

A) $\sin 45°\cos 30° - \cos 45°\sin 30°$ **B)** $\sin 45°\cos 30° + \cos 45°\sin 30°$

C) $\sin 45° + \sin 30°$ **D)** $\cos 45°\cos 30° - \sin 45°\sin 30°$

1.10 $\cos 15°\cos 45° + \sin 15°\sin 45° = \ldots$ (1)

A) $\cos 75°$ **B)** $\frac{1}{2}$

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

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 [13 MARKS]

Answer the questions below WITHOUT the use of a calculator.

2.1 Determine the exact value of $\cos 15°$ using a compound-angle formula. (5)

2.2 Simplify fully: $\dfrac{\sin 2A}{1 + \cos 2A}$ (4)

2.3 Prove the identity: $\sin(A + B) - \sin(A - B) = 2 \cos A \sin B$ (4)

QUESTION 3 [12 MARKS]

Answer the questions below.

3.1 Write down the THREE forms of the identity for $\cos 2A$. (3)

3.2 If $\sin 25° = p$, express $\sin 50°$ in terms of p. **(4)**

3.3 Solve for $x \in [0° ; 360°]$: $\sin 2x = \cos x$ **(5)**

TOTAL: 35 marks

This question paper consists of 3 questions.

© Danemathics — free to print and share for classroom use.