EXAM-STYLE CLASS TEST

MARKS	DURATION	QUESTIONS
36	55 minutes	3

Name: _____ Class: _____

Date: _____

MARK ____ / 36

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 $\sqrt{50}$ in simplest surd form is ... (1)

A) $2\sqrt{5}$ **B)** $\sqrt{25}$

C) $25\sqrt{2}$ **D)** $5\sqrt{2}$

1.2 $\sqrt{12} + \sqrt{27} = \ldots$ (1)

A) $5\sqrt{3}$ **B)** $\sqrt{39}$

C) $6\sqrt{3}$ **D)** $5\sqrt{6}$

1.3 $\sqrt{8} \times \sqrt{2} = \ldots$ (1)

A) $\sqrt{10}$ **B)** 4

C) $2\sqrt{2}$ **D)** 16

1.4 Rationalise the denominator of $\frac{3}{\sqrt{5}}$. (1)

A) $\frac{\sqrt{15}}{5}$ **B)** $\frac{3\sqrt{5}}{\sqrt{5}}$

C) $\frac{3\sqrt{5}}{5}$ **D)** $\frac{3}{5}$

1.5 Rationalise the denominator of $\frac{2}{\sqrt{3}-1}$. (1)

A) $\sqrt{3}+1$ **B)** $\frac{2(\sqrt{3}+1)}{4}$

C) $\sqrt{3}-1$ **D)** $2\sqrt{3}+2$

1.6 The CONJUGATE of $\sqrt{7}+2$ is ... (1)

A) $2+\sqrt{7}$ **B)** $-\sqrt{7}-2$

C) $\sqrt{7}-2$ **D)** $\sqrt{7}+2$

1.7 If $\sqrt{x}=5$, then $x=$ ... (1)

A) 10 **B)** 5

C) 25 **D)** $\sqrt{5}$

1.8 $\sqrt{47}$ lies between which TWO integers? (1)

A) 23 and 24 **B)** 7 and 8

C) 5 and 6 **D)** 6 and 7

1.9 $(\sqrt{5})^2-(\sqrt{3})^2=$ ... (1)

A) $\sqrt{15}$ **B)** 8

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

1.10 For $\sqrt{x-3}$ to be REAL, x must satisfy ... (1)

A) $x \leq 3$ **B)** $x \geq 3$

C) $x > 3$ **D)** $x \geq -3$

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]

Simplify the following WITHOUT the use of a calculator. Leave your answers in simplest surd form.

2.1 $\sqrt{12} + \sqrt{27} - \sqrt{3}$ **(4)**

2.2 $(\sqrt{5} - 2)(\sqrt{5} + 2)$ **(3)**

2.3 $\sqrt{72} - \sqrt{50} + \sqrt{8}$ **(4)**

QUESTION 3 [15 MARKS]

Rationalise the denominators and answer the questions that follow.

3.1 $\dfrac{4}{1 + \sqrt{2}}$ **(5)**

3.2 $\dfrac{\sqrt{3}}{\sqrt{3}-1}$ **(5)**

3.3 Determine, without a calculator, between which two consecutive integers $\sqrt{72}$ lies. **(3)**

3.4 Explain why $\sqrt{9}+\sqrt{16} \neq \sqrt{25}$. **(2)**

TOTAL: 36 marks

This question paper consists of 3 questions.

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