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 For the pattern 4 ; 9 ; 14 ; 19 ; ... the general rule is $T_n = \ldots$ (1)

A) $4n + 5$ **B)** $n + 5$

C) $5n + 4$ **D)** $5n - 1$

1.2 For $T_n = 3n + 2$, the 12th term is ... (1)

A) 17 **B)** 36

C) 38 **D)** 26

1.3 If $T_n = 2n + 1$, which term is equal to 41? (1)

A) 20 **B)** 19

C) 21 **D)** 41

1.4 The rule "start at 7 and add 6 each time" gives $T_n = \ldots$ (1)

A) $n + 6$ **B)** $6n + 1$

C) $7n + 6$ **D)** $6n + 7$

1.5 A pattern is 30 ; 26 ; 22 ; 18 ; ... Its rule is $T_n = \ldots$ (1)

A) $-4n + 34$ **B)** $-4n + 30$

C) $30 - 4n$ **D)** $4n - 34$

1.6 For $T_n = -4n + 34$, which term is equal to 2? (1)

A) 6 **B)** 9

C) 8 **D)** 32

1.7 A tile pattern is 3 ; 5 ; 7 ; ... The number of tiles in the nth pattern is ... (1)

A) $2n + 1$ **B)** $3n$

C) $2n + 3$ **D)** $n + 2$

1.8 The constant difference of a linear pattern appears in $T_n = an + b$ as ... (1)

A) neither **B)** a

C) b **D)** $a + b$

1.9 Which pattern has the rule $T_n = 5n$? (1)

A) 5 ; 6 ; 7 ; 8 **B)** 0 ; 5 ; 10 ; 15

C) 5 ; 10 ; 15 ; 20 **D)** 1 ; 5 ; 25 ; 125

1.10 For $T_n = n^2 + 1$, the 5th term is ... (1)

A) 36 **B)** 25

C) 11 **D)** 26

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 [12 MARKS]

Consider the pattern 4; 9; 14; 19; ...

2.1 Describe the rule of the pattern in words, and write down the next TWO terms. (3)

2.2 Determine the general rule of the pattern in the form $T_n = ...$ **(3)**

2.3 Hence determine the 10th term of the pattern, and the position of the term that is equal to 124. **(3)**

2.4 Determine which term of the pattern is equal to 74. **(3)**

QUESTION 3 [13 MARKS]

Study the pattern of tiles below and answer the questions that follow.



Term 1
3 tiles

Term 2
5 tiles

Term 3
7 tiles

3.1 Write down the number of tiles in the first three patterns, and the constant difference between them. **(3)**

3.2 Determine the general rule in the form $T_n = ...$ **(3)**

3.3 Without drawing the figures, determine the number of tiles in the 17th pattern, and in the 50th pattern. **(3)**

3.4 A different pattern is 30; 26; 22; 18; ... Determine its general rule and state which term is equal to 2. **(4)**

TOTAL: 35 marks

This question paper consists of 3 questions.

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