EXAM-STYLE CLASS TEST

MARKS	DURATION	QUESTIONS
33	50 minutes	3

Name: ..... Class: .....

Date: .....

MARK ____ / 33

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 Complete: $\frac{1}{5}$ is ... (1)

A) an irrational number
B) a natural number
C) a rational number
D) a non-real number

1.2 Which one of the following is IRRATIONAL? (1)

A) $\sqrt{16}$
B) $\frac{2}{3}$
C) $\sqrt{18}$
D) -7

1.3 $\sqrt{9} + \sqrt{25} = ...$ (1)

A) 15
B) 8
C) $\sqrt{34}$
D) 34

1.4 $\sqrt[3]{-27}$ is ... (1)

A) a positive number
B) undefined
C) non-real
D) a real, negative number

1.5 Between which TWO consecutive integers does $\sqrt{138}$ lie? (1)

A) 11 and 12
B) 12 and 13
C) 68 and 70
D) 10 and 11

1.6 Which one of the following is a WHOLE number but NOT a natural number? (1)

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

C) 0 **D)** 1

1.7 The list -23 ; -19 ; -6 ; 9 ; 17 is arranged in ... (1)

A) order of size only **B)** descending order

C) no order **D)** ascending order

1.8 Every INTEGER is also ... (1)

A) a rational number **B)** an irrational number

C) a non-real number **D)** a natural number

1.9 $0,\dot{3}$ ($0{,}333...$ recurring) is ... (1)

A) an integer **B)** non-real

C) irrational **D)** rational

1.10 Which one of the following is NOT a real number? (1)

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

C) 0 **D)** $\sqrt[3]{-8}$

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]

Given the list of numbers below:

$$\sqrt{9}+\sqrt{25}\ ;\ -\sqrt{4}\ ;\ \sqrt[3]{-27}\ ;\ \frac{2}{3}\ ;\ \sqrt{18}\ ;\ -27$$

2.1 Write down a NATURAL number from the list, and explain why $-\sqrt{4}$ is not one. (3)

2.2 Write down a NEGATIVE IRRATIONAL number from the list. If there is none, say so and give a reason. **(3)**

2.3 Write down a NON-REAL number from the list. If there is none, say so, give a reason, and give ONE example of a number that IS non-real. **(3)**

2.4 Write down a rational number from the list that is NOT an integer, and one from the list that IS an integer. **(3)**

QUESTION 3 [11 MARKS]

Answer the questions below WITHOUT using a calculator.

3.1 Determine between which TWO consecutive integers $\sqrt{138}$ lies. **(3)**

3.2 Is $\sqrt{18}$ rational or irrational? Give a reason for your answer. **(2)**

3.3 Explain why $0{,}666\ldots$ is a rational number, and write it as a common fraction. **(3)**

3.4 Define a rational number, and use your definition to explain why every integer is rational. **(3)**

TOTAL: 33 marks

This question paper consists of 3 questions.

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