EXAM-STYLE CLASS TEST

MARKS	DURATION	QUESTIONS
31	50 minutes	3

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

Date: .....

MARK ____ / 31

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 A line drawn PARALLEL to one side of a triangle divides the other two sides ... (1)

A) into equal parts **B)** at right angles
C) in the ratio $2:1$ **D)** proportionally

1.2 In $\triangle ABC$, D lies on AB and E on AC with $DE \parallel BC$. If $AD = 4$, $DB = 6$ and $AE = 6$, then $EC =$ ... (1)

A) 15 **B)** 4
C) 9 **D)** 6

1.3 Two triangles are SIMILAR when ... (1)

A) their corresponding angles are equal **B)** their corresponding sides are equal
C) they have the same area **D)** they have the same perimeter

1.4 $\triangle ABC \,|||\, \triangle DEF$, and each side of $\triangle ABC$ is 3 times the matching side of $\triangle DEF$. The ratio area $\triangle ABC$: area $\triangle DEF$ is ... (1)

A) $3:1$ **B)** $27:1$
C) $1:3$ **D)** $9:1$

1.5 In $\triangle ABC$ with $\hat{B} = 90°$ and $BD \perp AC$, $BD^2 =$ ... (1)

A) $AD \times DC$ **B)** $AD + DC$
C) $AB \times BC$ **D)** $AC \times AD$

1.6 In that same triangle, $AB^2 = \ldots$ (1)

A) $AD \times DC$ **B)** $DC \times AC$

C) $AD \times AC$ **D)** $AC^2 - AD^2$

1.7 Triangles with the SAME height have areas in the ratio of ... (1)

A) the squares of their bases **B)** their bases

C) their perimeters **D)** their heights

1.8 In $\triangle ABC$, D lies on AB and E on AC with $DE \parallel BC$. $\triangle ADE$ and $\triangle ABC$ are similar because ... (1)

A) DE bisects BC **B)** their sides are equal

C) their corresponding angles are equal **D)** their areas are equal

1.9 The MIDPOINT theorem is the proportion theorem with the special ratio ... (1)

A) $2 : 1$ **B)** $1 : 1$

C) $1 : 3$ **D)** $1 : 2$

1.10 Two similar triangles have areas of $16\ cm^2$ and $25\ cm^2$. Their sides are in the ratio ... (1)

A) $16 : 25$ **B)** $4 : 5$

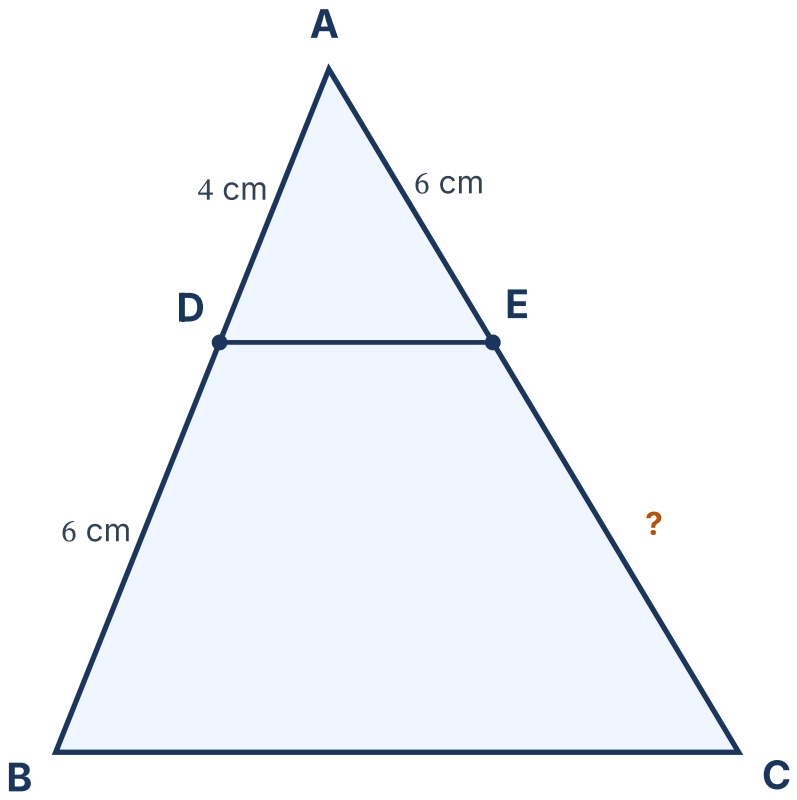
C) $8 : 25$ **D)** $2 : 5$

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 [10 MARKS]

In $\triangle ABC$, D lies on AB and E lies on AC, with DE $\parallel$ BC. It is given that AD $= 4$ cm, DB $= 6$ cm and AE $= 6$ cm.



not drawn to scale

2.1 State the proportion theorem that applies here, with its reason. **(3)**

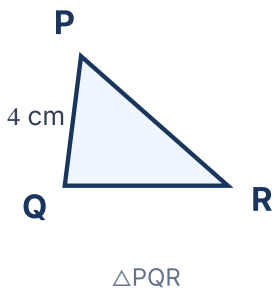
STATEMENT	REASON

2.2 Calculate the length of EC. **(4)**

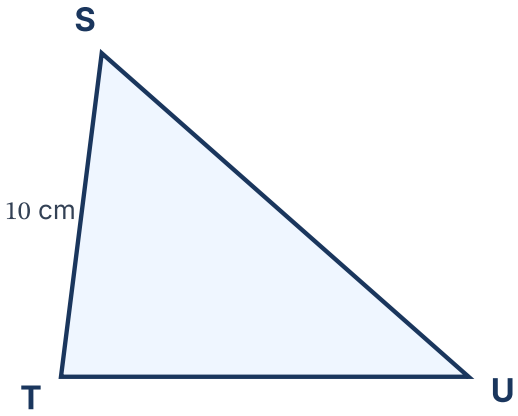
2.3 Write down the ratio AD : AB, and hence the ratio DE : BC. **(3)**

QUESTION 3 [11 MARKS]

△PQR ||| △STU, with PQ = 4 cm and ST = 10 cm.



△PQR



△STU

3.1 Write down the ratio of the corresponding sides. **(2)**

3.2 Determine the ratio of the AREA of △PQR to the area of △STU, with a reason. **(3)**

STATEMENT	REASON

3.3 If the area of △STU is 75 cm^2, calculate the area of △PQR. **(3)**

3.4 Explain why equiangular triangles must be similar. **(3)**

STATEMENT	REASON

TOTAL: 31 marks

This question paper consists of 3 questions.

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