

**MATHEMATICS Compulsory Part**

**PAPER 1**

**Section A1**

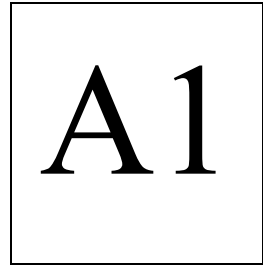
**Question-Answer Book**

2¼ hours

This paper must be answered in English.

**INSTRUCTIONS**

1. Write your Name, Class and Class number in the spaces provided on the right. Circle your Group Number.
2. This paper consists of THREE sections, A(1), A(2) and B.
3. Attempt **ALL** questions in this paper. Write your answers in the spaces provided in this Question-Answer Book. Do not write in the margins. Answers written in the margins will not be marked.
4. Graph paper and supplementary answer sheets will be supplied on request. Write your Name, Class and Class number in the spaces provided, mark the question number box, and fasten them with string **INSIDE** this book.
5. Unless otherwise specified, all working must be clearly shown.
6. Unless otherwise specified, numerical answers should be either exact or correct to 3 significant figures.
7. The diagrams in this paper are not necessarily drawn to scale.



Name	
Class	( )
Group	G1 LTN G2 PSK G3 LMW G4 HL G5 YKC G6 LTN G7 HL

Question No.	Marks
1	
2	
3	
4	
5	
6	
7	
8	
9	
Total	

**SECTION A(1) (35 marks)**

1. Simplify  $\frac{(x^{-2}y^3)^4}{(y^{-5})^2}$  and express your answer with positive indices. (3 marks)

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2. Let  $a$ ,  $b$  and  $c$  be non-zero numbers such that  $4a = 3b$  and  $\frac{b}{c} = \frac{6}{5}$ .  
Find  $\frac{a + 2b}{b + 3c}$ . (3 marks)

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3. A bag contains  $n$  white balls, 5 black balls and 9 pink balls. If a ball is randomly drawn from the bag, the probability of drawing a pink ball is  $\frac{3}{8}$ . Find the value of  $n$ . (3 marks)

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4. Factorize

(a)  $m^3 - m^2n + 6m^2$ .

(b)  $4m - 4n + 24 - m^3 + m^2n - 6m^2$ .

(4 marks)

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5. A box of tokens are shared by Steve and Paul, where Steve got  $\frac{1}{3}$  of them. Steve used 8 tokens and then gave 18 tokens to Paul. The number of tokens with Steve is now  $\frac{1}{7}$  of the number of tokens with Paul. Find the number of tokens in the box. (4 marks)

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6. Consider the compound inequality

$$\frac{7x-17}{3} < 5(x+1) \text{ or } 5-x < 6 \dots\dots\dots(*)$$

- (a) Solve (\*).  
(b) Write down the least integer satisfying (\*). (4 marks)

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8. A pack of brown sugar is termed regular if its weight is measured 100 g correct to the nearest g.
- (a) Find the least possible weight of a regular pack of brown sugar.
  - (b) A student claims that the total weight of 48 regular packs of brown sugar can be measured as 4.7 kg correct to the nearest 0.1 kg. Do you agree? Explain your answer.

(5 marks)

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