

Candidates' Performance

Paper 1

Candidates generally performed better in Section A than in section B.

Section A(1)

Question Number	Performance in General
1	Very good. A few candidates wrongly gave $x^{12}y^{-13}$ as the answer.
2	Very good. A few candidates mistakenly made t the subject of the given formula.
3 (a)	Good. Some candidates were unable to factorize the given expression.
(b)	Good. Some candidates had difficulty in handling negative numbers, and hence unable to factorize the given expression.
4 (a)	Very good. Most candidates were able to obtain the correct price.
(b)	Good. A few candidates were unable to handle the percentage loss.
5	Good. Some candidates had difficulty in handling the ratio $5 : 4$ or wrongly thought that the number of girls : the number of boys = $5x : 4y$. Also some candidates were able to find the numbers of girls and boys but did not write down the difference of the numbers.
6 (a)	Good. Some candidates had difficulty in handling the inequality sign. Also a few candidates were unable to obtain the solution of the compound inequality.
(b)	Fair. Some candidates wrongly gave -4 as the answer.
7 (a)	Good.
(b)	Fair. Most candidates were able to find the slope, but some candidates were unable to obtain the correct answers of P' or Q' , and hence gave wrong answer in (b).
8 (a)	Good. A few candidates wrongly thought that $5a$ to represent the data $50 + a$.
(b)	Good. Most candidates were able to obtain the correct answer if they obtained the correct answer in (a).
9 (a)	Fair. Some candidates wrongly thought that $AECF$ is a parallelogram. And some candidates wrongly thought that $AF = CE$.
(b)	Fair. Many candidates were unable to indicate $\angle ACE = 90^\circ$. Most candidates used the Heron's formula, which is the non-foundation topic, to find the area of $\triangle ACE$.

Section A(2)

Question Number	Performance in General
10 (a) (b)	Very good. Some candidates did not know $C = 40n$. Good. Some candidates were unable to compare total cost and total income.
11 (a) (b)	Very good. Some candidates were unable to obtain the correct radius. Fair. Some candidates had difficulty in handling locus. A few candidates were unable to obtain the coordinates of H and K.
12 (a) (b)	Fair. Some candidates had difficulty in handling median. Some candidates were able to list out two relations involving a, b and c, but cannot obtain the values of a, b and c by using the ranges of a and c. A few candidates wrote down the correct values of a, b and c, without any explanation. Poor. Some candidates found the correct answer without any explanation. Most candidates had difficulty in handling the relationship between standard deviation and data dispersion.
13 (a) (b)	Poor. Most candidates wrongly thought that the height of the cone was equal to the height of the container. Poor. A few candidates were able to use the result of (a), but most of them were unable to obtain the correct answer in (a), and hence gave wrong answers.
14 (a) (b)	Fair. Most candidates had difficulty in handling equations start from $f(x) = ax^3 + bx^2 + cx + d$. A few candidates were able to solve the equation by considering $f(x) = (x + 2)(x - 3)(ax + b)$. Poor. Most candidates were unable to obtain the correct answer in (a), and hence gave wrong answers.

Section B

Question Number	Performance in General
15	Fair. Most candidates had difficulty in handling standard score. Some candidates wrongly thought that the new standard deviation was $10 \times 110\% + 8 = 19$.
16 (a)	Good. Some candidates had difficulty in handling all the situations that the numbers of supervisors from departments A and B are the same.
(b)	Poor. Most candidates did not understand the question. They wrongly thought that the denominator was C_7^{13} .
17 (a)	Very good. Most candidates were able to obtain the common ratio of the sequence. A few candidates wrongly thought that the 6th term of the sequence was $8r^6$.
(b)	Fair. Some candidates had difficulty in handling the summation of the terms in geometric sequence. Some candidates were unable to solve the inequality by taking logarithm on both sides.
18 (a)	Fair. Some candidates obtained the coordinates of the vertex without using the method of completing the squares.
(b)	Poor. A few candidates were able to set up the quadratic equation in x .
19 (a)	Very good. Most candidates were able to find AB by using the sine formula or the cosine formula.
(b) (i)	Poor. Most candidates did not understand the question. A few candidates wrongly thought that VAD is an equilateral triangle.
(b) (ii)	Poor. Most candidates did not understand the question.
20 (a) (i)	Poor. Most candidates had difficulty in handling orthocenter and centroid.
(a) (ii)	Poor. Most candidates were unable to explain $MN \perp ED$.
(b) (i)	Poor. Only a few candidates were able to obtain the coordinates of C .
(b) (ii)	Poor. Most candidates had difficulty in handling centers of triangle.

General recommendations

Candidates are advised to:

1. grasp fundamental mathematics topics like percentage, inequality and mensuration;
2. show all working and explain clearly how to get the conclusion from the premise;
3. define any symbols used;
4. write down the unit of the answer if necessary;
5. identify different cases in probability problems;
6. have a better understanding of statistical terms and their applications;
7. practice more on problems involving explanations of answers;
8. develop a better spatial sense, such as distinguishing right-angled triangles from non right-angled triangles in 3D diagrams;
9. make use of the memory space in calculators for carrying more significant figures throughout the working in solving trigonometric problems; and
10. trace the co-relation between different parts of a question, particularly in long questions.

Paper 2

The paper consisted of 45 multiple-choice items. The mean score was 23. Post-examination analysis revealed the following:

1. Candidates' performance on Items 1, 2, 3, 13 and 22 was good. Over 70% of the candidates answered them correctly.
2. Candidates' performance on Items 14, 35 and 37 was unsatisfactory. Less than 30% of the candidates gave the correct answer.
3. In Item 14, many candidates overlooked that the weight of salt in each packet is measured as 15 g correct to the nearest g, and hence wrongly gave Option B as the answer.

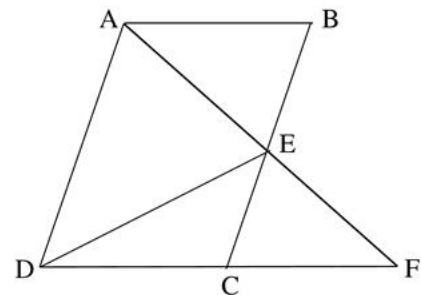
Q.14 There is a bag of salt. The weight of salt in the bag is measured as 8 kg correct to the nearest kg . If the bag of salt is packed into n packets such that the weight of salt in each packet is measured as 15 g correct to the nearest g , find the least possible value of n .

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|-----|-----|-------|
| *A. | 483 | (23%) |
| B. | 484 | (30%) |
| C. | 517 | (34%) |
| D. | 548 | (13%) |

4. In Item 18, many candidates were not familiar with the ratio of the areas of the triangles with the same base, and hence gave wrong answers.

Q.18 In the figure , $ABCD$ is a parallelogram. E is a point lying on BC such that $BE : EC = 3 : 2$.
If the area of $\triangle ECF$ is 96 cm^2 , then the area of $\triangle ADE$ is

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|-----|--------------------|-------|
| A. | 144 cm^2 | (14%) |
| B. | 192 cm^2 | (19%) |
| C. | 216 cm^2 | (29%) |
| *D. | 360 cm^2 | (38%) |



5. In Item 35, many candidates were not familiar with the graph of linear inequality in two unknowns, and hence gave wrong answers.

Q.35 Which of the following systems of inequalities will make $p = 2x - 3y$ have both maximum and minimum values?

$\text{A. } \begin{cases} x \geq 0 \\ y \geq 0 \\ 3x - 2y \leq 6 \end{cases} \quad (22\%)$	$\text{B. } \begin{cases} x \leq 0 \\ y \leq 0 \\ 3x - 2y \geq 6 \end{cases} \quad (20\%)$
$\text{C. } \begin{cases} x \geq 0 \\ y \geq 0 \\ 3x - 2y \geq 6 \end{cases} \quad (28\%)$	$\text{*D. } \begin{cases} x \geq 0 \\ y \leq 0 \\ 3x - 2y \leq 6 \end{cases} \quad (30\%)$

6. In Item 37, many candidates overlooked that the range of the values of x , and hence wrongly gave Options B or C as the answer.

Q.37 For $0^\circ \leq x \leq 360^\circ$, how many roots does the equation $\sin x(3 \cos^2 x + 4 \cos x - 4) = 0$ have ?

A.	2		(17%)
B.	3		(27%)
C.	4		(28%)
*D.	5		(28%)

7. In Item 45, many candidates were not familiar with finding the standard deviation without using the calculators, and hence gave wrong answers.

Q.45 The standard deviation of the five numbers $-3a + b$, $-3a + 5b$, $-3a - 3b$, $-3a + 9b$ and $-3a - 7b$, where $b > 0$, is

*A.	$4\sqrt{2b}$	(32%)
B.	$2\sqrt{10b}$	(25%)
C.	$\frac{24}{5}b$	(26%)
D.	$32b$	(17%)