

MATHEMATICS

SUBJECT 4008/4028

PAPER 02

PROFESSIONAL REPORT

1. THE QUESTION PAPER

Though the level of difficulty of the paper has not changed, it turned out that there were more questions requiring higher order facilities like application and interpretation.

2. THE MARKING SCHEME

The scheme was very friendly to candidates, there were lots of instances where candidates did not have to show working as evidenced by B marks and “no penalty”. However some examiners thought there were many instances where they had to watch out for alternative methods, and some got deviations that way.

Generally candidates’ performance was satisfactory. It appears this time assumed those who wrote were serious candidates.

QUESTION BY QUESTION ANALYSIS

QUESTION 1

- (a) Well done by the majority of candidates. Surprisingly poor candidates could not apply the rules of residence.
- 8 was a common wrong answer.
- (b) Fairly well done but a few left like terms not simplified.
- (c) This part proved different for many who could not factorize $x^3 - x^2$ and could not simplify $2 \log_4 8$.

QUESTION 2

- (a) Part (i) was well done.
Weak candidates could not change $9^{(m-1)}$ to $3^{2(m-1)}$, in part (ii).
- (b) Badly done by many. Most who could have got it right left one brackets from $A \cap (B \cup C)$
- (c) Fairly well done except for number of elements in Q' .

QUESTION 3

- (a) Poorly done by many. A common error was division by R-3 to give

$$\frac{n-3}{6}x \frac{4}{n-9} = \frac{4}{6(n-3)}$$

A few misread the \div as $+$

- (b) i) Most weak candidates stated that multiplication was impossible.

Quite a sizeable number gave the answer as a 2×1 matrix.

- ii) Many candidates failed to get the inverse of B after getting the wrong determination. Common working answers were $\frac{1}{\text{matrix}}$ or $\begin{pmatrix} 4 & -1 \\ 5 & 6 \end{pmatrix}^{-1}$

- (c) Poorly done. Many did not equate the determination to zero.

- (d) Surprisingly very poorly done.

$$\frac{270}{100} \times 840 \left(\frac{8}{12}\right) \text{ or } 840 = \frac{270}{100} \times \frac{8}{12} \times x$$

Were very common wrong procedures.

QUESTION 4

- (a)i) Poorly done. Many took the side of the square as 6cm.

- ii) Well done.

- (b) Good candidates got full marks. The majority failed to get the equation and so got nothing. A few of the good ones forgot to add 12 and 44.

QUESTION 5

- (a)i) Was well done by many.

- ii) The majority of those who got it wrong failed to manipulate signs. Most started by dividing by π and then multiplied only r^2 by R.

- (b) Poorly done by many.

$8x + 7x + 8 \times 7 = 442$ was a common wrong equation.

Even finding the mass proved difficult for many who gave either

$$\frac{442}{0,7} \text{ or } 442 \times 0,7$$

QUESTION 6

- (a) Well done by the majority.
- (b)i) Very poorly done. Most candidates failed to get the equations of the lines, and some who got the equation then reversed inequality signs.
- ii) Fairly well done. Common errors were $5 \times 6 - 6$

QUESTION 7

Quite a popular question.

- (a)i) Fairly well done. Many candidates equated the sum of the angles to 360° and ended up with a negative angle.
- ii) Most multiplied whatever they got by 5.
- (b)i) Fairly well done. The reduction in most cases was badly done.
- ii) Most quoted the formula correctly but quite a number worked with no division line and ended up getting wrong answers.

QUESTION 8

A very popular question in which most candidates scored high marks.

A few however had false construction arcs.

QUESTION 9

This was not a popular question. Perhaps candidates were used to drawing the diagram, not the other way round.

- (a) Fairly well done by many.
- (b) Most could identify the transformation well.
- (c) $\begin{pmatrix} 2 \\ -3 \end{pmatrix}$ was a common wrong answer.
- (d) Poorly done.

QUESTION 10

Fairly popular question.

- (a)i) Poorly done. $\frac{2}{3}q$ or q were common wrong answers for \vec{OR}
- ii)a) Fairly done
- b) Poorly done $\frac{4}{9}$ was common.

(b)i) Fairly well done.

A few candidates ferry on some zeros.

Some ended on finding 10% of 700 000 as their answer.

ii)a) Fairly well done.

b) Poorly done. Many had either no denomination or a wrong denomination.

QUESTION 11

A very popular question.

a) Poorly done. Most failed to manipulate the 0,5 in the given formula.

b) Points correctly plotted by many used a ruler to join points. Reversed axe were very common.

c)i) Poorly done, many gave just one value 0,85.

ii) Tangent not drawn in most cases.

d) Very few candidates drew the line $V=10t$

e) Poorly done since it depended on (d).

QUESTION 12

a) Poorly done. Most candidates did not know what to do.

b)i) Fairly well done. 29 was a common wrong answer.

ii) Poorly done. Most stated 40 or 45 and not the range of the group.

iii) Poorly done. Very few got 12.

iv) Fairly well done. Some had the answer $\frac{9}{33}$