Write your name here

Surname

Other names

**Pearson Edexcel Certificate
Pearson Edexcel
International GCSE**

Centre Number

Candidate Number

Mathematics A
Paper 1F

Foundation Tier

Friday 10 January 2014 – Morning
Time: 2 hours

Paper Reference
**4MA0/1F
KMA0/1F**

You must have:
Ruler graduated in centimetres and millimetres, protractor, compasses, pen, HB pencil, eraser, calculator. Tracing paper may be used.

Total Marks

Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Without sufficient working, correct answers may be awarded no marks.
- Answer the questions in the spaces provided
  – *there may be more space than you need*.
- **Calculators may be used.**
- You must **NOT** write anything on the formulae page.
  Anything you write on the formulae page will gain NO credit.

Information

- The total mark for this paper is 100.
- The marks for **each** question are shown in brackets
  – *use this as a guide as to how much time to spend on each question.*

Advice

- Read each question carefully before you start to answer it.
- Check your answers if you have time at the end.

Turn over

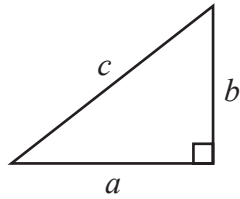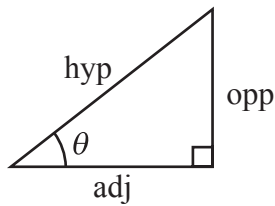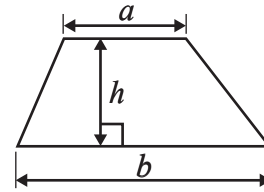**PEARSON**

International GCSE MATHEMATICS

FORMULAE SHEET – FOUNDATION TIER

Pythagoras'
Theorem
$a^2 + b^2 = c^2$

Area of a trapezium = $\frac{1}{2}(a + b)h$

$\text{adj} = \text{hyp} \times \cos \theta$
$\text{opp} = \text{hyp} \times \sin \theta$
$\text{opp} = \text{adj} \times \tan \theta$

Volume of prism = area of cross section × length
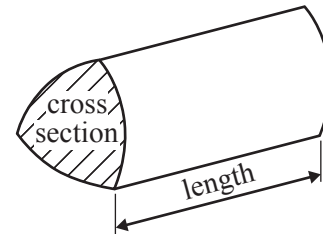
or $\quad \sin \theta = \dfrac{\text{opp}}{\text{hyp}}$

$\cos \theta = \dfrac{\text{adj}}{\text{hyp}}$

$\tan \theta = \dfrac{\text{opp}}{\text{adj}}$

Circumference of circle = $2\pi r$

Area of circle = πr^2

Volume of cylinder = $\pi r^2 h$

Curved surface area
of cylinder = $2\pi r h$

Answer ALL NINETEEN questions.

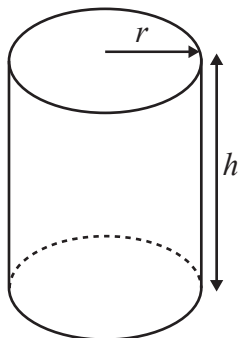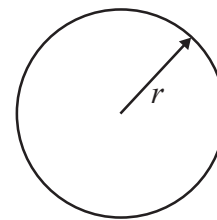**Write your answers in the spaces provided.**

You must write down all the stages in your working.

1   The table gives information shown to passengers on a plane during a flight from Dubai to Birmingham.

Altitude	9753 m
Distance from Dubai	4018 km
Distance to Birmingham	1589 km
Time in Birmingham	4 35 pm

(a) Write the number 4018 in words.

....

(1)

(b) Write down the value of the 7 in the number 9753

....

(1)

(c) Write the number 1589 correct to the nearest hundred.

....

(1)

The distance from Dubai is greater than the distance to Birmingham.

(d) How many kilometres greater?

.... km
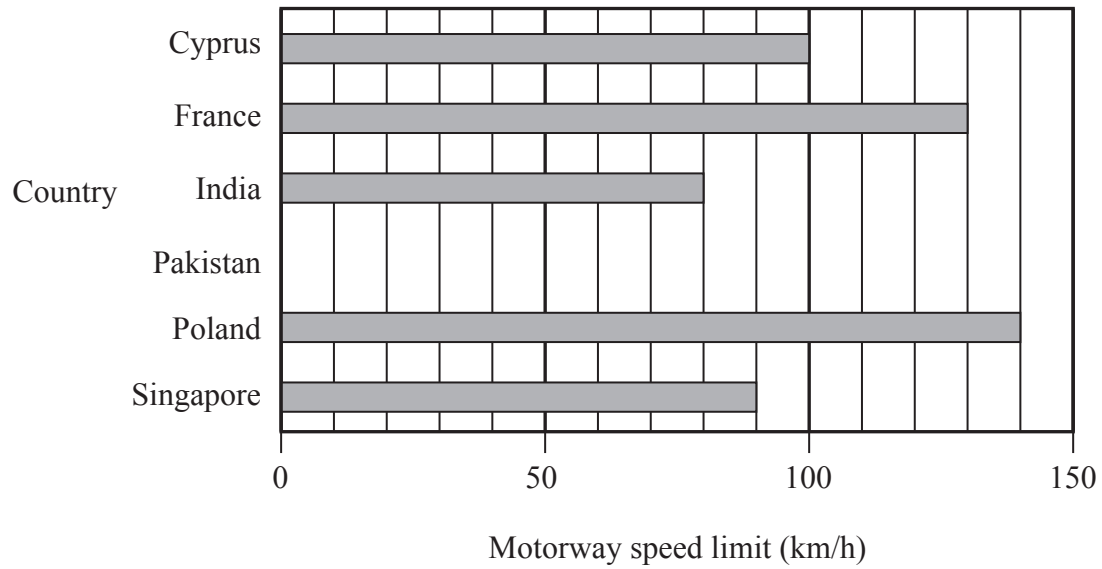
(1)

(e) Write 4 35 pm as a time using the 24-hour clock.

....

(1)

(Total for Question 1 is 5 marks)

2 The bar chart shows information about the motorway speed limit in each of five countries.

Motorway speed limit (km/h)

(a) What is the motorway speed limit in France?

.... km/h
(1)

(b) In which country is the motorway speed limit 90 km/h?

....
(1)

(c) In Pakistan, the motorway speed limit is 120 km/h.

Draw a bar on the bar chart to show this information.

(1)

(d) Work out the range of the motorway speed limits in the six countries.

.... km/h
(2)

(Total for Question 2 is 5 marks)

Do NOT write in this space.

3 (a) Find a fraction which is equivalent to $\dfrac{3}{5}$

....
(1)

(b) Write $\dfrac{3}{5}$ as a decimal.

....
(1)

(c) Write $\dfrac{3}{5}$ as a percentage.

...................%
(1)

(d) Mathsville School has 875 students.

$\dfrac{3}{5}$ of the students are girls.

(i) Work out $\dfrac{3}{5}$ of 875

....

(ii) Work out the fraction of the students who are boys.

....

8% of the students were born in May.
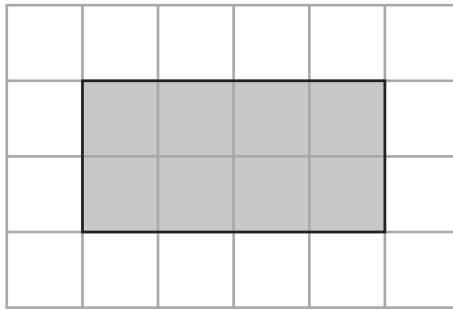
(iii) Work out 8% of 875

....
(5)

(Total for Question 3 is 8 marks)

4 (a) Here is a shaded quadrilateral drawn on a grid of centimetre squares.

    (i) Write down the mathematical name of this shaded quadrilateral.

....

    (ii) Find the perimeter of this shaded quadrilateral.

.... cm

(2)

(b) Here is another shaded quadrilateral drawn on a grid of centimetre squares.

    (i) Write down the mathematical name of this shaded quadrilateral.

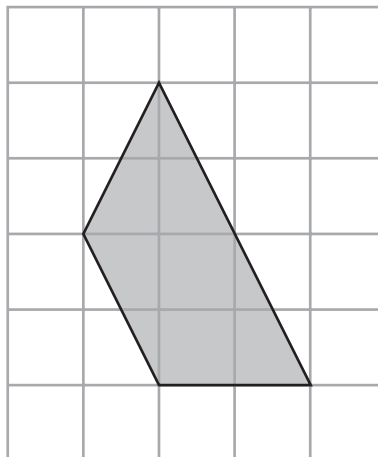...

    (ii) On this shaded quadrilateral, mark with arrows (>) a pair of parallel lines.

    (iii) Find the area of this shaded quadrilateral.

.... cm^2

(4)

6

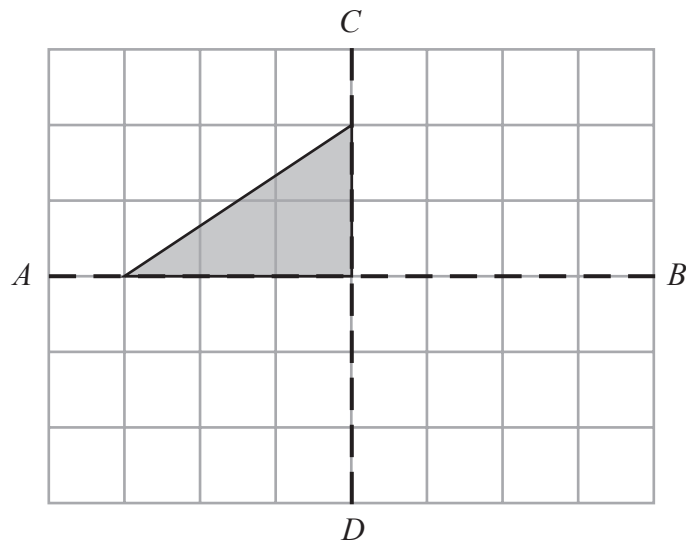(c) The lines *AB* and *CD* are the 2 lines of symmetry of a quadrilateral.
The diagram shows part of the quadrilateral.

On the grid, complete the drawing of the quadrilateral.

(2)

(d) A quadrilateral has rotational symmetry of order 4 about the point *P*.
The diagram shows one side of the quadrilateral.

On the grid, complete the drawing of the quadrilateral.

(2)
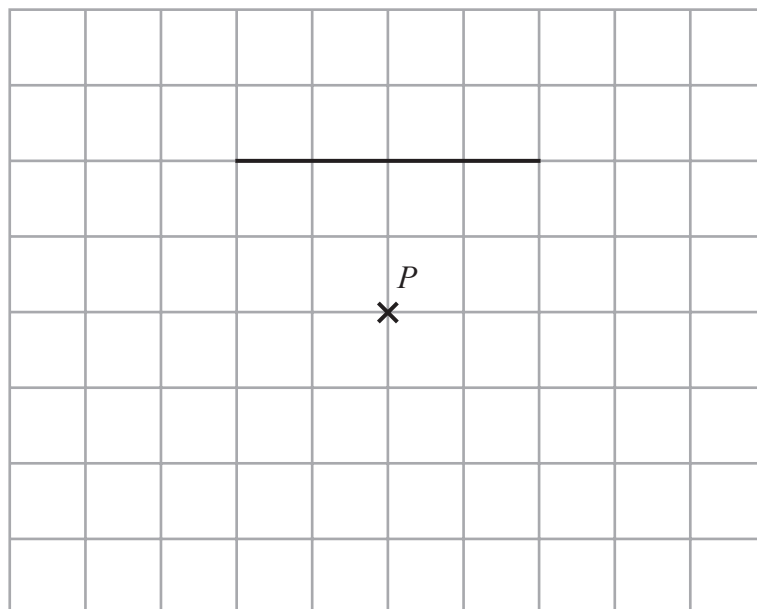
(Total for Question 4 is 10 marks)

5 Here is a sequence of patterns made from white dots and black dots.

Pattern number 1

Pattern number 2

Pattern number 3

(a) Draw Pattern number 4

(1)

(b) Complete the table.

Pattern number	1	2	3	4	5
Number of white dots	2	4	6		
Number of black dots	3	5	7		

(2)

(c) Work out the number of white dots in Pattern number 19

....

(1)

(d) (i)   Work out the number of black dots in Pattern number 27

....

(ii)   Explain how you found your answer to part (d)(i).

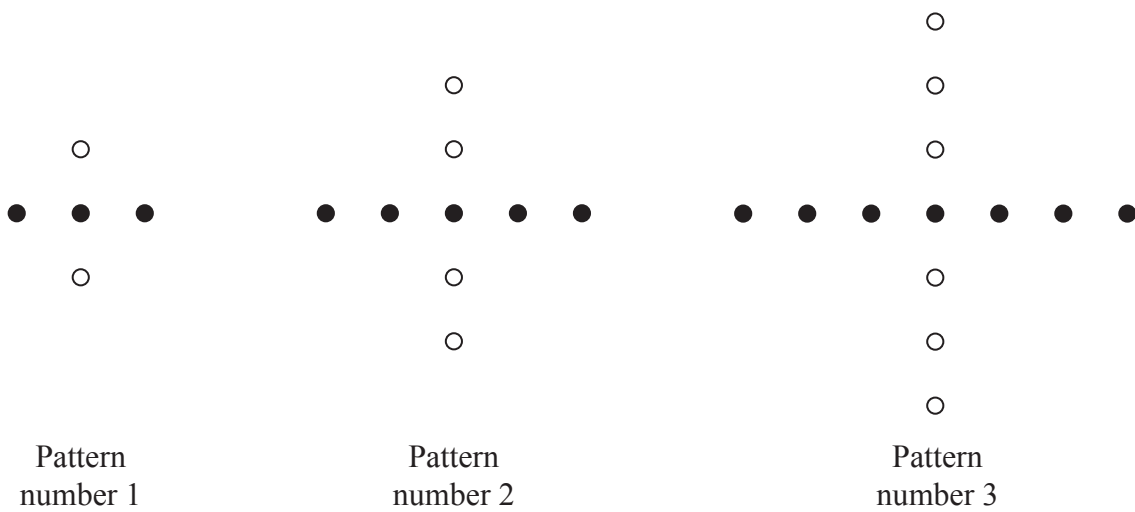..

....

(2)

(e) Work out the Pattern number of the pattern with 65 black dots.

Pattern number = ...

(2)

(f) *W* is the number of white dots in Pattern number *n*.

Write down a formula for *W* in terms of *n*.

....

(2)

(Total for Question 5 is 10 marks)

6 (a) Find the value of $\sqrt{8.41}$

.... **(1)**

(b) Find the value of 7.4^2

.... **(1)**

(c) (i) Calculate the cube of 2.7
Write down all the figures on your calculator display.

....

(ii) Write your answer to part (c)(i) correct to 3 significant figures.

.... **(2)**

(d) Calculate the value of $2^4 \times 5^3$

.... **(1)**

(Total for Question 6 is 5 marks)

7 (a) Simplify $5c - 6d - 2c + 4d$

.... **(2)**

(b) Solve $4x + 5 = 17$

$x =$ .... **(2)**

(Total for Question 7 is 4 marks)

8 A box contains 20 nails.
The table shows information about the length of each nail.

Length of nail (mm)	25	30	40	50	60
Number of nails	1	8	4	5	2

(a) Which length of nail is the mode?

.... mm

(1)

(b) Viraj takes at random one nail from the box.

Find the probability that the length of the nail he takes is

(i)   more than 10 mm,

....

(ii) 40 mm,

....

(iii) 50 mm or 60 mm,

....

(iv) less than 35 mm.

....

(7)

(Total for Question 8 is 8 marks)

Do NOT write in this space.

11

Turn over ▶

9 (a)

Diagram **NOT**
accurately drawn

$x°$

38°
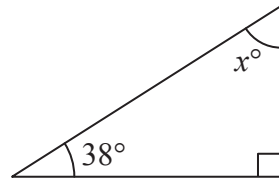
The diagram shows a right-angled triangle.

Work out the value of x.

$x =$ ....

(2)

(b)

Diagram **NOT**
accurately drawn

58°

79°

107°
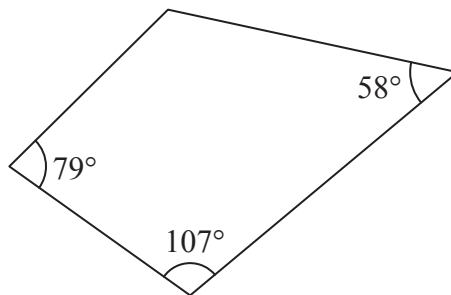
Three of the angles of a quadrilateral are 79°, 107° and 58°

Work out the size of the fourth angle of the quadrilateral.

...........................°

(2)

(Total for Question 9 is 4 marks)

Do NOT write in this space.

10 Jean has a car.
Last year, the costs of running her car were £4200 and £0.16 for every kilometre the car travelled.
Last year, the total cost of running her car was £5772

Work out the number of kilometres the car travelled last year.

....

(Total for Question 10 is 3 marks)

11 (a) Simplify $5c \times 4c$

....

(1)

(b) Factorise $4x + x^2$

....

(2)

(c) Work out the value of $y^3 + 5y$ when $y = 2$

....

(2)

(Total for Question 11 is 5 marks)

12
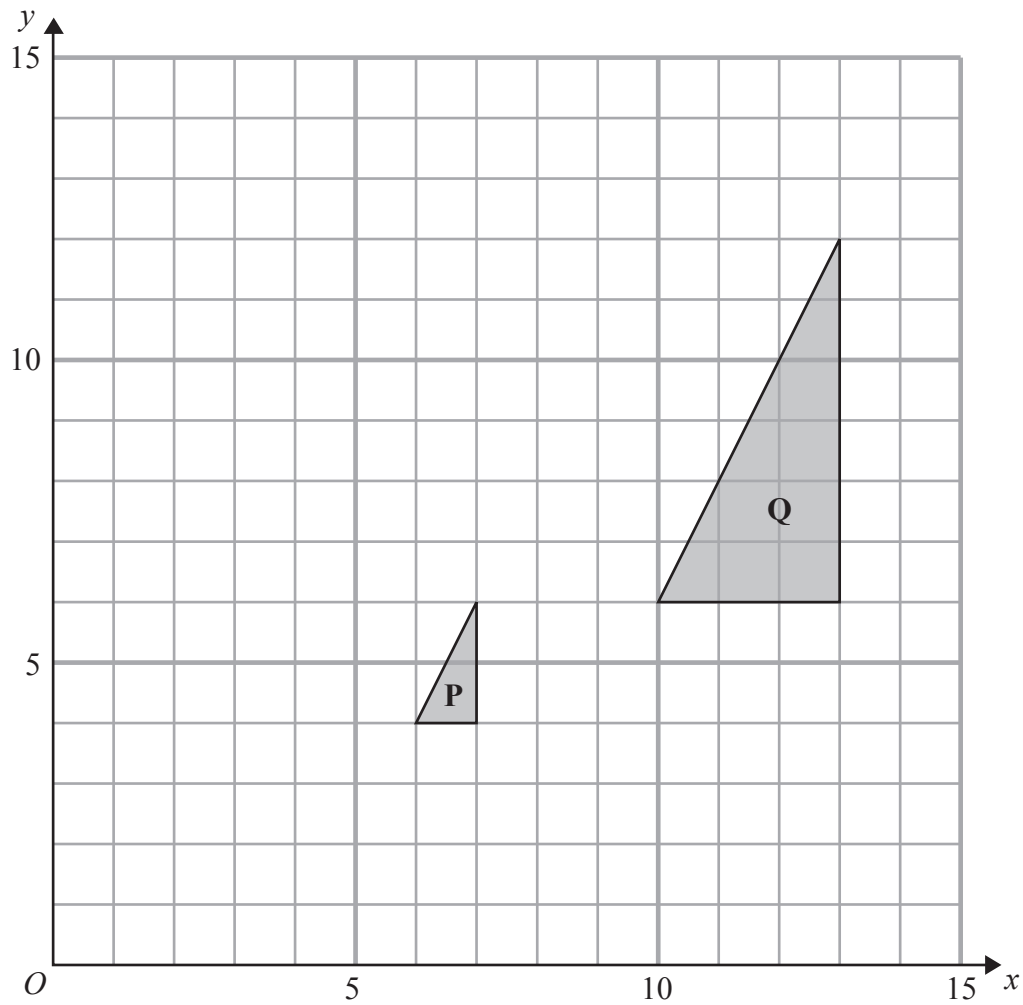
(a) Describe fully the single transformation which maps triangle **P** onto triangle **Q**.

....

....

(3)

(b) On the grid, translate triangle **Q** 8 units to the left and 2 units up.
Label the new triangle **R**.

(1)

(Total for Question 12 is 4 marks)

Do NOT write in this space.

14

13 Here is a list of the ingredients needed to make leek and potato soup for 6 people.

Leek and Potato Soup
Ingredients for 6 people
900 ml chicken stock 900 ml water 750 g leeks 350 g potatoes 350 g onions

(a) Find the ratio of the weight of leeks to the weight of potatoes.
   Give your ratio in its simplest form.

....

(2)

(b) Ainsley wants to make leek and potato soup for 13 people.

   Work out the amount of chicken stock he needs.

.... ml

(2)

(c) Delia makes leek and potato soup for a group of people.
   She uses 1250 g of leeks.

   Work out the number of people in the group.

....

(2)

(Total for Question 13 is 6 marks)

P 4 2 9 3 8 A 0 1 5 2 0

14 A plane flew from Frankfurt to Hong Kong.
The flight time was 10 hours 45 minutes.
The average speed was 852 km/h.

Work out the distance the plane flew.

.... km

(Total for Question 14 is 3 marks)

15

Diagram **NOT**
accurately drawn

7.8 cm

x cm

43°
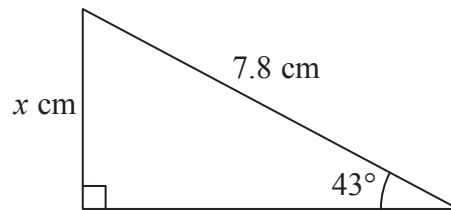
Work out the value of x.
Give your answer correct to 3 significant figures.

$x =$ ....

(Total for Question 15 is 3 marks)

Do NOT write in this space.

16 A box contains 80 tea bags.
The table shows information about the weight of each tea bag.

Weight (w grams)	Number of tea bags
$2.8 < w \leqslant 2.9$	2
$2.9 < w \leqslant 3.0$	4
$3.0 < w \leqslant 3.1$	22
$3.1 < w \leqslant 3.2$	32
$3.2 < w \leqslant 3.3$	14
$3.3 < w \leqslant 3.4$	6

(a) Work out the percentage of the 80 tea bags that weigh more than 3.1 grams.

.... %

(2)

(b) Work out an estimate for the total weight of the 80 tea bags.
Use halfway values of 2.85 grams, 2.95 grams, ...

.... grams

(3)

(Total for Question 16 is 5 marks)

P42938A01720

17 (a) Write $2^3 \times 2^4$ as a single power of 2

....

(1)

(b) $280 = 2^n \times 5 \times 7$

Find the value of n.

$n =$ ....

(2)

(Total for Question 17 is 3 marks)

18 (a)
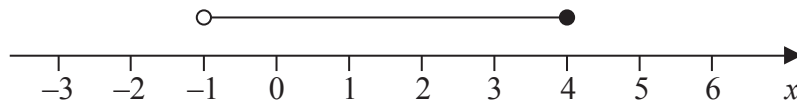
An inequality is shown on the number line.

Write down this inequality.

....

(2)

(b) (i) Solve the inequality $2(y - 3) \geqslant 1$

....

(ii) Write down the lowest **integer** which satisfies this inequality.

....

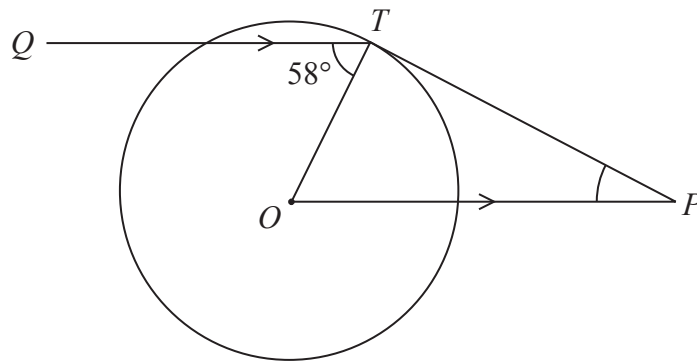**(4)**

(Total for Question 18 is 6 marks)

19

Diagram **NOT**
accurately drawn

T is a point on a circle, centre *O*.
Q is a point such that angle *QTO* = 58°
P is the point such that *OP* is parallel to *QT* and *PT* is a tangent to the circle.

Work out the size of angle *OPT*.

.... °

(Total for Question 19 is 3 marks)

TOTAL FOR PAPER IS 100 MARKS

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