INSTRUCTIONS TO CANDIDATES

• Answer all questions. There are 20 questions to answer.

• Each question carries 1 mark.

• Calculators, protractors and other mathematical instruments are not allowed.

• You are not required to show your working.

• Space for working is provided if you need it.
<table>
<thead>
<tr>
<th>No.</th>
<th>QUESTION</th>
<th>SPACE FOR WORKING (IF REQUIRED)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>The area of a rectangle of sides 5 cm and 10 cm is</td>
<td></td>
</tr>
<tr>
<td></td>
<td>A) 20 cm²   B) 250 cm²   C) 50 cm²   D) 10 cm²</td>
<td>Answer: __________</td>
</tr>
<tr>
<td>2.</td>
<td>Write down the <strong>square</strong> number between 27 and 38.</td>
<td>Answer: __________</td>
</tr>
<tr>
<td>3.</td>
<td>A hexagon has</td>
<td></td>
</tr>
<tr>
<td></td>
<td>A) 8 sides   B) 4 sides   C) 6 sides   D) 5 sides</td>
<td>Answer: __________</td>
</tr>
<tr>
<td>4.</td>
<td>Evaluate 23 – (–3)</td>
<td>Answer: __________</td>
</tr>
<tr>
<td>5.</td>
<td>This is the net of</td>
<td></td>
</tr>
<tr>
<td></td>
<td>A) a cube   B) a cylinder   C) an open box   D) a square pyramid</td>
<td>Answer: __________</td>
</tr>
<tr>
<td>6.</td>
<td>Change 3000 g to kilograms.</td>
<td>Answer: _____ kg</td>
</tr>
<tr>
<td>7.</td>
<td>A box contains 100 marbles. 30% of the marbles are red. The rest are yellow. How many marbles are yellow?</td>
<td>Answer: __________</td>
</tr>
<tr>
<td>8.</td>
<td>What is the area of a triangle with sides as shown?</td>
<td>Answer: _____ cm²</td>
</tr>
</tbody>
</table>
9. Mary buys 10 stamps for €3. How much did she pay for each stamp?

   Answer: __________

10. A film starts at 8.00 p.m. It finishes at 10.45 p.m. How long is the film?

   Answer: ____hr ____min

11. Simplify $7p + 3q - 5p + 2q$.

   Answer: _______________

12. Which one of these shapes is a quadrilateral?

   (A)   (B)   (C)  

   Answer: __________

13. What is the size of angle $x$?

   Answer: __________

14. I select a letter at random from the word PLASTICS. The probability that I select S is

   (A) $\frac{1}{2}$   (B) $\frac{1}{4}$   (C) $\frac{1}{8}$   (D) $\frac{2}{3}$

   Answer: __________

15. Which of these numbers is a prime number?

   (A) 39   (B) 255   (C) 41   (D) 410

   Answer: __________
16. What fraction of this container is filled with water?

Answer: 

17. The turtle starts from the position shown. Sketch the figure drawn by the turtle for this set of LOGO commands:

PD LT 90 FD 50 RT 90 FD 100

18. Write down the output of this function machine in the empty box.

<Diagram of function machine>

19. Line P has equation

(A) \( y = 2x - 2 \)

(B) \( y = 2x + 4 \)

(C) \( y = 2x + 2 \)

(D) \( y = 2x \)

Answer: 

20. Which one of the following angles is obtuse?

(A) 45°  (B) 97°  (C) 89°  (D) 30°

Answer: 

1. (a) Work out the following numbers to the nearest whole number:
   
   (i) 276.53  
   Answer: ________

   (ii) 516.361  
   Answer: ________

(b) Write the following numbers to the nearest 10:

   (i) 3895  
   Answer: ________

   (ii) 10013  
   Answer: ________

[4 marks]

2. (a) Give the value of:

   (i) $3.5 \times 100$  
   Answer: ________

   (ii) $3.5 \div 100$  
   Answer: ________

(b) What is the value of $x$ if $x \times 1000 = 5700$?

   Answer: ________

[4 marks]
3. (a) Underline the correct value for \( x \).

(A) 90°  (B) 20°  (C) 45°

(b) (i) Complete the following equation:

\[ x + 30° + _____ = 90° \]

(ii) Simplify and solve the equation to find \( x \).

4. (a) Arrange in order of size starting with the smallest:

23.4  27.15  21.61  22

Answer: _____________________________

(b) Which is the largest number in the following list?

(A) 12\times10    (B) 3\times100    (C) 51    (D) 12 \times10000

Answer: ______________

(c) Work out \( 2\times2\times2 + 2\times2\times2\times2 \)

Answer: __________

[5 marks]

5. Calculate the value of \( x, y \) and \( z \).

\( x = \) ____________

\( y = \) ____________

\( z = \) ____________

[4 marks]
6. Solve the equations:
   
   (a) \(3x - 2 = x\)

   Answer: __________

   (b) \(7x + 10 = 2x\)

   Answer: __________

   [6 marks]

7. (a) I am paid €5 for every hour I work. How much will I earn if I work 23 hours?

   Answer: €_________

   (b) Ten equally spaced poles are in a straight line. The distance from the first to the last pole is 81 m. What is the distance from pole to pole?

   Answer: _________ m

   (c) What is the distance from the first to the fourth pole?

   Answer: _________ m

   [6 marks]
8 (a) Change 3.3 kilometres into metres.

Answer: _____________ m

(b) Calculate 15% of 2 hours.

Answer: ___________ min

(c) Express $\frac{3}{5}$ as a percentage.

Answer: ______________

[6 marks]

9. (a) Given that $a = 2x - bh$ calculate the value of $a$ when $x = 6$, $b = 2$ and $h = 1$.

Answer: ____________

(b) This recipe makes four pancakes.

Recipe for 4 pancakes

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>80 g plain flour</td>
<td></td>
</tr>
<tr>
<td>200 ml milk</td>
<td></td>
</tr>
<tr>
<td>1 egg</td>
<td></td>
</tr>
<tr>
<td>4 spoonfuls jam</td>
<td></td>
</tr>
</tbody>
</table>

(i) How much flour would you need to make one pancake?

Answer: ______ g

(ii) How much flour would you need for 5 pancakes?

Answer: ___________ g

(iii) How many pancakes can you make with 240 g flour, 600 ml, 3 eggs and 12 spoonfuls of jam?

Answer: __________ pancakes

[6 marks]
10. (a) A number of square tiles are arranged as shown.

(i) What is the percentage of white tiles?

Answer: ____________

Each tile is of side 50 cm.

(ii) What is the perimeter in metres of the shape formed?

Answer: ____________

(b) A square tile of side 20 cm has a circle drawn on it as shown.

(i) What is the order of symmetry of the tile?

Answer: ____________

(ii) The circumference of the circle is ______ \( \pi \) cm.

(iii) Taking \( \pi = 3.14 \) give the circumference correct to the nearest whole number.

Answer: ____________

[8 marks]
11. The bar chart shows the number of different types of cars sold by a dealer in one year.

(a) Use the bar chart to complete the following table:

<table>
<thead>
<tr>
<th>Type of Car</th>
<th>AUDI</th>
<th>FORD</th>
<th>BMW</th>
<th>KIA</th>
<th>FIAT</th>
<th>ROVER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number sold</td>
<td>60</td>
<td>30</td>
<td>45</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(b) What was the total number of cars bought?

Answer: _________

(c) What was the mean number of cars sold per month?

Answer: _________ cars

[6 marks]
12. The figure shows a flag in the form of an **equilateral** triangle.

(a) Complete the following LOGO program which draws the flag.

```
P D
  F D  2 0 0
  R T  1 2 0
  F D  ____  
    ____  1 2 0
  F D  ____
```

(b) Calculate the total number of turtle steps required to draw this shape.

Answer: __________

[6 marks]

13. (a) A six-sided dice has the letters A, L, F, R, E and D on its faces, one letter on each face. Work out the probability that the dice shows:

(i) a letter from the word RED.

Answer: __________

(ii) a letter from the word LEAF.

Answer: __________

(b) A coin is thrown 100 times to test whether it is a fair coin. 76 heads were obtained. Do you think that the coin is fair? (Tick one of the boxes below and fill the space with a number.)

YES [ ]  NO [ ]

because about _________ heads should be obtained.

[5 marks]
14. (a) Complete the following function machines.

\[
\begin{array}{c}
\text{Input } x \\
1 \quad \times 2 \quad + 1 \\
2 \quad \times 2 \quad + 1 \\
3 \quad \times 2 \quad + 1 \\
\end{array}
\]

Output y

(b) Use your results in part (a) to complete the following pairs of co-ordinates:

(1, ___), (2, ___) and (3, ___)

(c) Plot these points on the grid and use your ruler to join them with a straight line.

(d) Continue your straight line to cut the \(y\)-axis.

It cuts the \(y\)-axis at \(y = \) _______.

[10 marks]