Year 7 Entrance Exams

Maths

Specimen Paper 2

Instructions to candidates

Time allowed: 45 minutes

Instructions to candidates:

1. Show all working - you may receive marks for correct working even if your final answer is wrong. Leave all fractions in their lowest form.

2. Answer as many questions as you can, in any order.

3. Do not spend too long on any one question - if you get stuck, move on to the next.

4. Answers and working should be written on the exam paper in the spaces provided.

5. Calculating aids are NOT permitted.
1. Write in figures, the number: Sixty three thousand, four hundred and one.

Answer: _____________

2. Circle all the numbers that can be exactly divided by 5

68  70  43  5  217

3. Find the missing number:

\[
\begin{array}{cccc}
1 & 9 & \times & \boxed{3} \\
\end{array}
\]
\[= 152\]

4. Calculate \(\frac{5}{8}\) of 4000

Answer: _____________

5. Calculate each of the following:

(a) \(7921 + 846\)

Answer: _____________

(b) \(2031 - 1357\)

Answer: _____________

(c) \(73 \times 8\)

Answer: _____________
6. Here is a straight-line graph.

The points A, B and C are equally spaced.

What are the co-ordinates of the point B?

Answer: B (______,______)

Point D is directly below point C as shown.

What are the co-ordinates of the point D?

Answer: D (______,______)

7. Which one of the following statements is false?

A. $2 + 5 \times 4 = 22$   B. $18 - 6 \times 3 = 0$   C. $15 - 2 \times 7 = 1$
D. $7 + 1 \times 3 = 24$   E. $8 \times 5 - 7 = 33$

Answer: ______________

8. What is the probability of scoring a 6 on this spinner?

Answer: ______________
9. Choose from this set of numbers

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>9</td>
<td>10</td>
<td>11</td>
</tr>
<tr>
<td>12</td>
<td>13</td>
<td>14</td>
<td>15</td>
</tr>
</tbody>
</table>

(i) a square number

Answer (i) : _______________

(ii) three multiples of 3.

Answer (ii) : _______________ , _______________ , _______________

(iii) three factors of 60.

Answer (iii) : _______________ , _______________ , _______________

10. Look carefully at this number pattern.

\[1^2 + 3 = 4\]
\[2^2 + 5 = 9\]
\[3^2 + 7 = 16\]
\[4^2 + 9 = 25\]

Write the next two lines of the pattern

__________________________
__________________________

11. Calculate 273 ÷ 7

Answer: ________________
12. In Moscow at noon it is 4°C. By midnight the temperature has dropped by 10°C. What is the temperature at midnight?

Answer: __________˚C

13. In magic squares, the numbers in every row, column and the two diagonals add up to the same number. What is the sum of the missing numbers in the magic square below?

Answer: _____________

\[
\begin{array}{ccc}
4 & 8 & 9 \\
 & 7 & \\
\end{array}
\]
14. For Ben’s birthday he goes to the cinema. Tickets cost £3.85 for children and £5.50 for adults. In his party there are 4 children and 2 adults.

(a) How much do the tickets cost?

Answer: _____________

(b) Ben’s Mum hands the cashier two £20 notes for the tickets. How much change does she receive?

Answer: _____________

(c) The film starts at 15:55 and finishes at 5.35pm. How long does it last?

Answer: _____________

15. Ben wants to buy 17 small bottles of drink for a party. A shop sells them at: 15p for 1 bottle; 28p for two bottles; 60p for a pack of 5 bottles. What is the smallest amount of money he needs to spend? [Give your answer in £s]

Answer: £____________
16. This sequence of numbers goes up by 30 each time.

\[30, 60, 90, 120, 150, \ldots\]

The sequence continues.

Will the number 1330 be in the sequence?  
Answer: ________________

Explain how you know:
_________________________________________________________________________________

17. Here is a table of toys owned by 6 children:

<table>
<thead>
<tr>
<th>Child</th>
<th>Board games</th>
<th>Computer games</th>
<th>Sports equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alan</td>
<td>1</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Ben</td>
<td>3</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Chris</td>
<td>0</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>David</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Ed</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Faizal</td>
<td>0</td>
<td>0</td>
<td>4</td>
</tr>
</tbody>
</table>

Whose toys are not on the graph?  
Answer: ________________
18. The four numbers 8, 3, 9 and ___________ have an average of 6.

What number goes in the box?

Answer: ___________

19. Fill in the spaces in the following table.

Leave all fractions in their lowest form.

The first line has been done for you.

<table>
<thead>
<tr>
<th>Fraction</th>
<th>Decimal</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\frac{1}{2}$</td>
<td>0.5</td>
<td>50%</td>
</tr>
<tr>
<td>$\frac{1}{4}$</td>
<td></td>
<td>10%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.85</td>
</tr>
</tbody>
</table>

20. The diagram opposite (which is NOT drawn to scale) shows triangle ABC with angle B = 90°. AB = 8cm and BC =12cm.

(a) Complete the figure by drawing in two lines to make rectangle ABCD.
(b) What is the distance around (perimeter of) the rectangle?

Answer: ______________cm

(c) What is the area of triangle ABC?

Answer: ______________cm$^2$
21. On the planet Zog, all numbers are written with the digits in reverse order. For example, forty-five is written as 54. Pluto, an inhabitant of Zog, was given the subtraction $729 - 26$. If no mistakes were made, what answer did Pluto write down?

Answer: ____________________

22. Which is bigger: 20% of 25 or 25% of 20?

(Marks will only be given for answers accompanied by appropriate working)

Answer: ____________________

23. The same number if missing from all three boxes.

Write the same missing number in each box.

\[
\begin{array}{ccc}
\square & \times & \square & \times & \square \\
\end{array}
= 512
\]
24. Work out the following
   (a) $14\frac{2}{3} - 3\frac{5}{6}$ [Give your answer as a mixed number]

Answer (a): _____________

(b) $57.8 \times 0.1$

Answer (b): _____________

25. What is the smallest whole number, above 120, which when divided by 53, leaves a remainder of two.

Answer: _________________

Now check through your work carefully!