PRELIMINARY EXAMINATION FOR THE CERTIFICATE, 1911.

PART I.

ARITHMETIC.

Thursday, December 15th, 10.15—12.0.

All the questions may be attempted, but Candidates are recommended not to attempt more questions than they can do well.

Candidates are warned that their answers must be clear and easily intelligible.

1. I have £341 2*s*. 3*d*. to give to 17 men. How much can I give to each of them if each man receives the same amount?

2. In a certain division sum the quotient is equal to the remainder and the dividend is 500 times the quotient. Find the divisor.

3. A boy was 7 years 61 days old on December 1, 1910. When was he born?

4. Divide 16,133 by 13. State clearly the true value of each product and remainder used in the process.

5. How many unjointed pieces of wood 7 inches long can be cut from 12 pieces each 15 feet long? What wood will be left over?

6. A newspaper boy buys papers at $\frac{3}{4}d$. each, sells them at 1*d*. each, and receives back $\frac{1}{2}d$. for every unsold paper. If he buys 100 papers how many must he sell before he makes any profit, and how many must he sell to make a profit of 1*s*. 8*d*.?

7. A kilometre of cotton is wound on a reel. How much cotton will be left at the end of a year if 2 metres 13 centimetres are used daily? Give your answer in metres and decimals of a metre.

8. A man wishing to transact some business in the country hires a motor car, for which he is charged 1*s*. per mile and 1*s*. 6*d*. for each hour or part of an hour during which the car is waiting for him. He starts at 9 a.m., transacts his business in $2\frac{3}{4}$ hours, and reaches his home again at 7 minutes to 2. How far did he travel and at what rate in miles per hour if he paid £1 16*s*. 6*d*. for the use of the motor?

9. Work the following questions as shortly as you can:—

(1) Find the cost of 144 yards of flannel, at $5\frac{1}{4}d$. a yard.

(2) Evaluate $5 \cdot 365$ of £1 + $10 \cdot 54$ of 5*s*.

(3) Simplify $\frac{49}{50} - \frac{36}{37}$.

(4) A field is 157 yards long and 87 yards 2 feet wide. Another field is 312 yards 1 foot long and 157 yards wide. Find the sum of the areas of the fields, giving your answer in square yards.

10. What is the weight in grammes of a litre of water?

A cubic foot of sulphuric acid weighs approximately 115 lbs. Find in kilograms the weight of a cubic metre.

11. An empty paper bag lying flat measures 12 inches by 8 inches. It is then packed with tea and is formed into a rectangular parcel 7 inches long, $4\frac{1}{2}$ inches wide, and $3\frac{1}{2}$ inches thick. What fraction of the paper can then be seen?

12. A woman pays 2*d*. per month interest for a loan of 5*s*. What rate per cent. per annum does this represent, and how long would a sum of money take to treble itself if lent out at this rate per cent. simple interest?

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