AN ROINN OIDEACHAIS

(Department of Education).

INTERMEDIATE CERTIFICATE EXAMINATION, 1955.

MATHEMATICS (Arithmetic).

TUESDAY, 7th JUNE.—MORNING, 10 TO 12.

All questions to be answered.

Mathematical Tables may be obtained from the Superintendent.

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1. Find the cost of 8 tons 15 cwts. at £17 6s. 8d. per ton.
If $2\frac{1}{2}\%$ discount is allowed for cash, find the cash price.

[25 marks.]

2. (*a*) Simplify: $\dfrac{3\frac{5}{7} \div 2\frac{1}{6}}{1\frac{7}{8} \times 4\frac{4}{5}} \times (2\frac{1}{2} - 1\frac{4}{5})$.

(*b*) Evaluate $(0{\cdot}289)^3$, correct to two significant figures.

[25 marks.]

3. Find, correct to the nearest penny, the compound interest on £580 for three years at 4% per annum.

[30 marks.]

4. The scale of a map is 25 inches to the mile. A certain field is represented on the map by a rectangle 1·8 inches by 1·3 inches. Find (*a*) the length and breadth of the field, in yards correct to the nearest yard, (*b*) the area of the field in acres, correct to two significant figures.
(See Tables, p. 33.)

[30 marks.]

5. (*a*) A car which cost £450 was sold at a profit of 18%. Find the selling price.

(*b*) An article was sold for £124 17s. 6d. at a loss of $7\frac{1}{2}\%$. Find the cost price.

(*c*) When the price of tea was increased by 15%, a person reduced his consumption by 10%. By what percentage was his expenditure on tea altered by these changes ?

[30 marks.]

6. Two motorists, A and B, travel on a journey of 70 miles, A travelling at 30 miles per hour and B at 50 miles per hour. A begins the journey at 3 p.m. and B sets out at 3.30 p.m. from the same starting point. Find, graphically or otherwise,

(i) the time at which B overtakes A,

(ii) the times at which A and B are four miles apart,

(iii) how many miles A has still to travel when B has completed the journey.

[30 marks.]

7. A solid cylinder is 5 inches in diameter and 9 inches high. Find (*a*) the volume of the cylinder in cubic inches, correct to the nearest cubic inch, (*b*) the total surface area of the cylinder in square inches, correct to the nearest square inch.

A cube has the same volume as this cylinder. Find the length of the edge of the cube in inches, correct to two significant figures.

[30 marks.]