AN ROINN OIDEACHAIS

(Department of Education).

INTERMEDIATE CERTIFICATE EXAMINATION, 1954.

MATHEMATICS (Arithmetic).

WEDNESDAY, 9th 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 10 tons 12 cwt. 1 qr. of wheat at £4 2s. 6d. per barrel. (1 barrel of wheat weighs 280 lb.)

[25 marks.]

2. (*a*) Simplify :—

$$\frac{9\frac{1}{2}-7\frac{5}{8}}{1\frac{1}{4}(2\frac{2}{3}+\frac{1}{4})} \div 1\frac{3}{7}.$$

(*b*) Express 20% of 17s. 5d. as a decimal of £1, correct to three places of decimals.

[25 marks.]

3. A cylindrical tank when filled with water to a depth of $3\frac{1}{2}$ feet contains one ton of water. Find the internal diameter of the tank in inches, correct to the nearest inch.

(See Tables, page 33.) [30 marks.]

4. Given that one inch equals 2·54 centimetres, express (*a*) one kilometre in yards, correct to three significant figures, and (*b*) one square kilometre in square yards, correct to two significant figures.

[30 marks.]

5. Use the Tables to find the value of :—

(*a*) $(2{\cdot}762)^4$; (*b*) $\sqrt{11{\cdot}7}$; (*c*) $\sqrt[3]{0{\cdot}25}$; (*d*) $\frac{1}{\sqrt[3]{10}}$.

[30 marks.]

6. Find, correct to the nearest penny, the compound interest on £750 for three years at $2\frac{1}{2}$% per annum.

A sum of money is earning compound interest at the rate of $2\frac{1}{2}$% per annum. The difference between the interest for the first year and that for the second year is 7s. $4\frac{1}{2}$d. Find the sum of money.

[30 marks.]

P.T.O.

7. A shopkeeper bought ten articles at the same price per article. He sold five of them at a profit of 40% and three more at a profit of 20%. He later disposed of the remaining two at cost price. Find his percentage profit on the whole transaction.

If he had given one shilling in the £1 discount in each case, what then would have been his percentage profit on the whole transaction ?

[30 marks.]