

# AN ROINN OIDEACHAIS.

(Department of Education).

LEAVING CERTIFICATE EXAMINATION, 1952.

## MATHEMATICS—ARITHMETIC.

TUESDAY, 10th JUNE,—MORNING, 10 TO 12.

Six questions may be answered.

Mathematical Tables may be obtained from the Superintendent.

1. Calculate, to the nearest penny, the cost of 7 tons 17 cwts. 3 qrs. at £31 18s. 6d. per ton.

[33 marks.]

2. (a) Evaluate  $\frac{\sqrt{0.8456}}{95.63 \times 0.008456}$  correct to two significant figures.

(b) Find, as accurately as the Tables permit, the value of  $x$  in the equation  $3^x = 7^{20}$ .

[33 marks.]

3. A path, 1 yard wide, is laid down around the outside of a circular field of area 7.85 acres. Find, to the nearest pound, the cost of laying down the path at 3s. 6½d. per square yard.

[Take  $\pi = 3.14$ .]

[33 marks.]

4. A wholesale merchant made a profit of 15% by buying goods and selling them to a retailer who, in turn, made a profit of 25% by selling the goods to his customers. How much did the wholesale merchant pay for goods which the retailer sold for £5 15s.?

If the retailer had allowed his customers a discount of one shilling in the pound, what would have been his percentage profit?

[33 marks.]

5. Which will give the better yield on money invested, (a) 3½% Stock at 120 or (b) £5 Shares at £5 5s. each on which a dividend of 3s. per share is paid?

A man who invested equal sums of money in (a) and (b) above obtained a total yearly income of £48 10s. Find the total sum invested.

[33 marks.]

6. Land is sold at the rate of 75,000 francs per hectare (100 ares). Express that rate in pounds per acre, correct to the nearest pound.

[1 are = 100 sq. metres; 1 inch = 2.540 cms.; £1 = 979 francs.]

[34 marks.]

7. Calculate, to the nearest penny, the amount at Compound Interest on £460 for 2 years at 4% per annum.

A man borrows £460 at 4% Compound Interest on the condition that he shall repay the whole in two equal annual payments, the first of these being made a year after the date of borrowing. Find, to the nearest penny, the value of each of the payments.

[34 marks.]

*Or,*

7. A vessel is in the shape of the frustum of a right circular cone. The vertical height of the vessel is 8 inches, the diameter of its base is 12 inches and the diameter of its top is 20 inches. Find in gallons, correct to two significant figures, the capacity of the vessel.

[34 marks.]