

AN ROINN OIDEACHAIS.

(Department of Education).

LEAVING 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.

1. If £1 = 2.80 dollars = 979 francs,

- (i) express £46 18s. 6d. in dollars ;
 - (ii) express £46 18s. 6d. in francs, correct to the nearest franc;
 - (iii) express 629 dollars in francs, correct to the nearest franc.
- [28 marks.]

2. Find the value of

$$\frac{(0.768)^2 \times \sqrt{34.6}}{(1.12)^3}$$

correct to two significant figures.

[28 marks.]

3. A man invested £4,200 in 5% Stock at 105 and £2,450 in $4\frac{1}{2}\%$ Stock at 98. Find his total income from these investments.

What sum of money invested in $3\frac{1}{3}\%$ Stock at 78 would give the same income ?

[28 marks.]

4. If income tax is calculated at the rate of 3s. in the £1 on the first £100 of taxable income, at 6s. in the £1 on the second £100 of taxable income, and at 7s. 6d. in the £1 on the remainder of the taxable income,

- (i) how much income tax is payable when the taxable income amounts to £280 ?
- (ii) What does the taxable income amount to if the income tax is £33 ?

[28 marks.]

5. (i) Find, correct to the nearest pound, the Compound Interest on £800 for 5 years at 2% per annum.

(ii) A Savings Certificate bought for £1 is worth £1 10s. at the end of 12 years. What rate of Compound Interest would give the same increase in the same time ?

[28 marks.]

6. A merchant buys two types of tea, type A at 4s. 6d. per lb. and type B at 5s. 4d. per lb. Find the percentage profit which he makes if he mixes them in the ratio of 2 lbs. of type A to 3 lbs. of type B and sells the mixture at 6s. per lb.

In what proportion should he mix the two types of tea so that he would make a profit of $12\frac{1}{2}\%$ by selling the mixture at 5s. 3d. per lb ?
[30 marks.]

7. A cylindrical tank contains 28 gallons of water when it is filled to a depth of 15 inches. Find the internal diameter of the tank, correct to the nearest inch.

When a metal sphere is totally immersed in the water, the level of the water is raised by 2 inches. Find the radius of the sphere, correct to the nearest inch.

[See Tables, p. 33.]

[30 marks.]