AN ROINN OIDEACHAIS
(Department of Education).

BRAINNSE AN MHEADHON-OIDEACHAIS
(Secondary Education Branch).

LEAVING CERTIFICATE EXAMINATION, 1939.

MATHEMATICS

ARITHMETIC.

FRIDAY, 16*th JUNE*—Morning, 10 a.m. to 12 Noon.

Six questions may be answered

Mathematical Tables may be obtained from the Superintendent.

1. The prices marked by a shopkeeper on his goods were 40% more than their cost prices and customers were allowed discount at the rate of 5% of the marked price. Find

   (i) the price paid by a customer for goods which the shop-keeper purchased for 75*s*.

   (ii) the price paid by the shopkeeper for goods which the customer buys for 11*s*. 1*d*.

   [30 marks.]

2. Evaluate

$$\sqrt[3]{(0\cdot8371 \times 7\cdot104) \div 0\cdot0987}$$

to *three* significant figures. [30 marks.]

3. Find, to the nearest penny, the Compound Interest on £500 for two years at 3% per half-year, the interest being added half-yearly. [30 marks.]

4. Express a pressure of 25 lbs. per square inch in kilograms per square centimetre.

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

5. Five men earn £25 10*s*., £42 8*s*., £37 6*s*., £18 14*s*., and £34 5*s*. respectively. What is the greatest and the least amount which a sixth man may earn so that the average earnings of the six men may be £30, correct to the nearest pound? [30 marks.]

6. Which yields the better dividend, $3\frac{1}{2}\%$ Stock at 75 or $3\frac{3}{4}\%$ Stock at 80 ?

A man having £2,460 invested £A of it in $3\frac{1}{2}\%$ Stock at 75 and the remainder in $3\frac{3}{4}\%$ Stock at 80. His total annual income from the two investments was $3d$. more than it would have been if he had invested £A in $3\frac{3}{4}\%$ Stock at 80 and the remainder in $3\frac{1}{2}\%$ Stock at 75. Calculate the value of A.

[35 marks.]

7. If each of two numbers leaves the same remainder when divided by a third number, show that their difference is exactly divisible by that third number.

By what number (other than unity) must the numbers 8613, 11764, and 19710 be divided so that the same remainder may be obtained in each case ?   [35 marks.]

8. A man borrowed £1,000 at 4% per annum Compound Interest He repaid both principal and interest by three equal annual payments which were made at the end of one year, two years and three years respectively from the date of the loan. Find, to the nearest shilling, the amount of each payment.   [35 marks.]

9. A vessel is in the form of a truncated cone. The diameter of the base is 5 feet, the diameter of the top is 3 feet, and the height is $2\frac{1}{2}$ feet. Find how many gallons of water that vessel could hold.

[See Tables, page 33.]

[35 marks.]