

AN ROINN OIDEACHAIS.

(Department of Education).

LEAVING CERTIFICATE EXAMINATION, 1956.

MATHEMATICS—ARITHMETIC.

TUESDAY, 5th JUNE.—MORNING, 10 TO 12.

All questions to be answered.

Mathematical Tables may be obtained from the Superintendent.

1. (i) Coal is bought at £8 10s. per ton and sold at 1s. 5d. per stone : find the percentage profit.
- (ii) If petrol costs 3s. 9d. per gallon, find, correct to the nearest £1, the cost of petrol for 12,000 miles at the rate of one gallon per 34 miles.
- (iii) Which is the faster, one mile in four minutes or 1500 metres in 3 minutes 45 seconds ? [See Tables p. 33].
[28 marks.]

2. Find the value of

$$\frac{(13.87)^2 \times \sqrt{0.9754}}{(3.256)^2}$$

correct to three significant figures.

[28 marks.]

3. (i) A man's electricity bill is calculated as follows:—he is charged 1½d. per unit for the first 360 units of electricity used and 1d. per unit for every unit above 360, and he must also pay a fixed charge of £1 4s. If his total bill is £3 12s. 4d., how many units did he use ?
- (ii) Find, correct to the nearest £1, the compound interest on £240 for 4 years at 3% per annum.
[28 marks.]

4. If a cubic foot of lead weighs 711 pounds, find the weight of 5000 spherical lead shot each of diameter 0.3 inch. (Give your answer correct to the nearest tenth of a pound).

How many lead shot of diameter 0.6 inch could be made from that weight of lead ?

[28 marks.]

5. (i) What sum of money invested in 5% Stock at 105 would give an income of £300 ?
- (ii) A man invested his money in 5s. shares (at 8s. 6d. each) on which a dividend of 8% was paid. His income would have been greater by £1 if he had invested the money in 5% Stock at 105. How much money did he invest ?
[28 marks.]

6. Under the terms of a legacy a man is to be paid £1000 now, £1000 a year hence and £1000 two years hence. Find the present worth of the legacy, correct to the nearest £1, compound interest being reckoned at the rate of 5% per annum.
[30 marks.]

7. A saucepan is in the shape of a frustum of a right circular cone. The diameter of the base is 3 inches and the diameter of the top is 5 inches. If the capacity of the saucepan is one pint, find its vertical height in inches, correct to one decimal place.
If the saucepan were filled to half its vertical height, show that it would contain about three-eighths of a pint.
[See Tables, p. 33].
[30 marks.]