

AN ROINN OIDEACHAIS

(Department of Education).

LEAVING CERTIFICATE EXAMINATION, 1950.

MATHEMATICS—Arithmetic.

TUESDAY, 6th JUNE.—MORNING, 10 TO 12.

All questions are of equal value.

Six questions may be answered.

Mathematical Tables may be obtained from the Superintendent.

1. (i) Express as a decimal, correct to *two* decimal places, the average value of the fractions

$$\frac{4}{7}, \frac{8}{15}, \frac{3}{11}, \frac{2}{5}$$

- (ii) Express £6 18s. 6½d. as a decimal of £9 12s. 6d., correct to *three* places of decimals.

2. Goods weighing 48 tons 13 cwt. 3 qrs. were bought at £32 10s. per ton and sold at 7s. per stone. Find the total profit.

3. Find the Compound Interest, correct to the nearest penny, on £784 for 3 years at 2½% per annum.

Find, also, as accurately as you can by using the Tables, the Compound Interest on this sum for 20 years at the same rate.

4. What amount of money invested in 2½% Stock at 94½ would yield a net income of £520 per annum after paying income-tax at the rate of 6s. 6d. in the £1.?

5. A merchant, having bought a quantity of tea, sold one-fifth of it at 3s. 4d. per lb., making thereby a profit of 25%. At what price per lb. must he sell the remainder so that his profit on his total outlay may be 40%?

6. An express train travelling at 60 miles per hour passed completely through a station in 10½ seconds. A goods train 280 yards long travelling at 21 miles per hour passed through the same station in 45 seconds. Find the length of the express train.

7. A piece of lead piping, 5 feet long, having an external diameter of 2 inches and an internal diameter of 1.6 inches is melted down and cast into 1000 spherical shot of equal size. Find the diameter of one of the shot.

[Give the answer in inches, correct to *two* places of decimals.]

8. In a motor race A travels at 87 miles per hour. He gives B 10 minutes start and overtakes him 62 miles from the start. If B's time for the whole course is 85 minutes, find *graphically*:

- (a) the length of the course;
- (b) the number of minutes by which A won;
- (c) the speed of B.