

AN ROINN OIDEACHAIS
(Department of Education).

BRAINNSE AN MHEADHON-OIDEACHAIS
(Secondary Education Branch).

INTERMEDIATE CERTIFICATE EXAMINATION, 1935.

MATHEMATICS (Arithmetic).

MONDAY, 17th JUNE.—MORNING, 10 A.M. TO 12 NOON.

The total number of questions answered should not exceed six.

(Candidates should see that answers to questions in excess of six are cancelled).

Mathematical Tables may be obtained from the Superintendent.

1. A circle and a square are equal in area. The diagonal of the square is 5 cm. long. Find, in inches, to within one-tenth of an inch, the radius of the circle.

[30 marks.]

2. (i) Express £3 17s. 9d. as a decimal of £10.

(ii) Express £2 13s. 6½d. as a decimal of £4 6s. 8½d., correct to two places of decimals.

[30 marks.]

3. Find, correct to two decimal places, the value of

$$\frac{8.096842 \times 267.8069}{750.3068}$$

[30 marks.]

4. Find the Compound Interest, to the nearest penny, on £5,600 for 4 years at 2½% per annum.

[30 marks.]

5. The scale of a map is 6 inches to a mile. Find (i) the area occupied on this map by a farm of area 100 acres; (ii) how many acres there would be in a farm occupying an area of 4 square inches on the map.

[32 marks.]

6. Find the value of

$$\frac{4}{5} \sqrt{23} \times \frac{1}{\sqrt[3]{7}} \div \cdot 0068.$$

[33 marks.]

7. The purchaser of a house let it at £100 per annum, out of which he had to pay each year £22 3s. in rates, £4 10s. ground rent, and £5 17s. income tax. This gave him a profit of $7\frac{1}{2}\%$ the first year on the price he paid for the house. Find (i) the price he paid for the house; (ii) the percentage profit he made the second year if he had £4 10s. extra expenditure on the house.

[35 marks.]

8. A swimming bath is 100 feet long and 35 feet wide, the depth being 4 feet at one end, increasing uniformly to 7 feet at the other end. How long will it take to fill the bath from a pipe which supplies 300 gallons of water per minute?

[35 marks.]

9. A train 100 yards long is travelling at 50 miles an hour. How long does it take it to pass a station 140 yards long? If it took 5 seconds to pass another train travelling in the opposite direction at 40 miles per hour, what was the length of that other train?

[35 marks.]