

AN ROINN OIDEACHAIS

(Department of Education)

INTERMEDIATE CERTIFICATE EXAMINATION, 1961.

MATHEMATICS (Arithmetic).

WEDNESDAY, 7th JUNE.—MORNING, 10 TO 12.

All questions to be answered.

Mathematical Tables may be obtained from the Superintendent.

1. (i) Find the value of $(7\frac{1}{3} - 1\frac{1}{2}) \div 2\frac{1}{3}$.

(ii) Find which is the greater, $\frac{5}{19}$ or $\frac{3}{11}$.

(iii) Find the value of $2.1 \times 2.3 \div 1.7$, correct to two places of decimals.

[25 marks.]

2. Find what £2,000 would amount to in 2 years at 6% per annum compound interest.

What rate of simple interest would give the same amount in the same time?

[25 marks.]

3. From the formula $T = 2\pi \sqrt{\frac{l}{g}}$ find the value of T , correct to three significant figures, when $l = 103.5$, $g = 981$.

[30 marks.]

4. (i) An article bought for £110 is sold at a loss of 10%. Find the selling price.

(ii) Sugar is bought at £2 18s. 4d. per cwt. and sold at 7½d. per lb. Find the percentage profit.

(iii) If a shopkeeper were to give a discount of 2s. in the £1, his profit would be halved. What percentage profit is he making at present?

[30 marks.]

5. (i) A certain quantity of water would last 42 days if each inhabitant of a town used 30 gallons a day. How long would it last if each inhabitant used 35 gallons a day?
- (ii) Two pipes are discharging petrol into a tank. One of the pipes by itself would fill the tank in one minute, the other pipe by itself would fill the tank in two minutes. How long will the two pipes together take to fill the tank?

[30 marks.]

6. Find what volume of wood is needed to make a closed rectangular box such that the sides, top and bottom of the box are all 1 inch thick, its external length and breadth are 27 and 24 inches, respectively, and its capacity is 4,400 cubic inches.

[30 marks.]

7. Given that a cubic foot of copper weighs 555 lbs., find, correct to the nearest foot, the length of copper piping that can be made from a ton of copper if the piping has an internal diameter of 2.3 ins. and an external diameter of 2.7 ins.

[30 marks.]