

AN ROINN OIDEACHAIS

(Department of Education).

INTERMEDIATE CERTIFICATE EXAMINATION, 1951.

MATHEMATICS (Arithmetic).

TUESDAY, 5th JUNE.—MORNING, 10 TO 12.

The total number of questions answered should not exceed *six*.

Mathematical Tables may be obtained from the Superintendent.

1. Find, correct to the nearest penny, the cost of 17 tons 8 cwts. 1 qr. at £5 7s. 8d. per ton.

[30 marks.]

2. Simplify $\frac{2\frac{2}{7}-1\frac{2}{3}}{5\frac{1}{3}\times 2\frac{1}{4}} \div \frac{\frac{4}{5}-\frac{2}{3}}{1\frac{3}{4}\times 2\frac{1}{2}-3\frac{1}{2}}$.

[30 marks.]

3. Find, correct to the nearest penny, the compound interest on £450 10s. for 3 years at 3% per annum.

[35 marks.]

4. When a metal cube is completely immersed in water in a cylindrical vessel of diameter 2 ins., the level of the water in the vessel is raised 0.2 in. Find the length of the edge of the cube in inches, correct to two places of decimals.

[35 marks.]

Or,

4. The amount of rain that falls on a certain horizontal field would cover the ground with water to a depth of one inch. Express this rainfall of one inch in tons of water per acre, correct to the nearest ton.

[1 cubic foot of water weighs 62.3 lbs.]

[35 marks.]

5. Find the value of $\frac{32.95 \times (0.524)^3}{\sqrt{0.8147}}$, correct to three significant figures.

[35 marks.]

(OVER)

6. A dealer makes a profit of 20% by selling cars at £420 each. What would be his percentage profit if he sold them at £392 each?

If he reduces his selling price of £420 by 5%, and if the number of cars he sells increases by 50%, show that his total profits will be increased by 5%.

[35 marks.]

Or,

6. A left a certain town at 1 p.m., cycling at 10 miles per hour, and after a certain time he altered his speed to 6 miles per hour. B left the same town at 2 p.m. and he followed A on the same route by car at 30 miles per hour, but when he had travelled 10 miles he stopped for 25 minutes. He then proceeded at 40 miles per hour and overtook A 12 minutes later. Find by means of a graph

- (i) how far they had both travelled when B overtook A,
- (ii) how far A travelled at 10 miles per hour.

[35 marks.]

1. Find, correct to the nearest penny, the cost of 17 tons 2 cwt. of coal at £37 7s. 6d. per ton.
[30 marks.]

$$\frac{24-12}{24 \times 24} = \frac{21-12}{24 \times 24}$$

2. Find, correct to the nearest penny, the compound interest on £200 for 3 years at 5% per annum.
[30 marks.]

3. When a metal cube is completely immersed in water in a graduated vessel of diameter 2 cm, the level of the water in the vessel is raised 0.2 cm. Find the length of the edge of the cube in inches, correct to two places of decimals.
[30 marks.]

4. The amount of rain that falls on a certain horizontal field would cover the ground with water to a depth of one inch. Express this rainfall of one inch in terms of water per acre correct to the nearest cubic foot of water weighs 62.5 lbs.
[30 marks.]

$$\frac{32.95 \times 60 \times 247}{7.0811}$$

5. Find the value of the following significant figures.
[30 marks.]
(Over)