AN ROINN OIDEACAIS

INTERMEDIATE CERTIFICATE EXAMINATION, 1962.

M.36.

MATHEMATICS (Arithmetic).

WEDNESDAY, 6th JUNE.—Morning, 10 to 12.

All questions to be answered.

Mathematical Tables may be obtained from the Superintendent.

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1. (i) Find the value of $(12 \div 1\frac{2}{3}) - 3\frac{1}{2}$.

(ii) Find the compound interest on £1,500 for 2 years at 4% per annum. (25 marks.)

2. A square field has an area of 5 acres. Find the length of the perimeter of the field, correct to the nearest yard. (1 acre = 4,840 square yards) (25 marks.)

3.(i) A car is travelling at 36 m.p.h. How many seconds does it take to travel one kilometre? (See Tables, p. 33)

(ii) The average weight of fourteen members of a team is 7 stone 13 pounds, and the fifteenth member weighs 9 stone. Find the average weight of the fifteen members of the team. (30 marks.)

4. Find the value of $173{\cdot}2 \times \sqrt{0{\cdot}4537} \div (1{\cdot}849)^2$ correct to three significant figures. (30 marks.)

5.(i) Coal is bought at £8 a ton and sold at 1s. 4d. a stone. Find the percentage profit.

(ii) A profit of 25% is made by selling an article for £400. Find the cost price.

(iii) A dealer sells an article at a certain price. If he were to sell the article at double that price, he would make four times as much profit on it. What percentage profit is he making on the article at present? (30 marks.)

6. A solid cylinder is 6 inches in height and its diameter is 5 inches. Find the volume of the cylinder in cubic inches and find the area of its curved surface in square inches, each correct to three significant figures.

Two cylinders are of equal height and the curved surface area of one of them is twice that of the other. What is the ratio between the volumes of the two cylinders? (30 marks.)

7. A cyclist left a town, A, at 12 noon travelling at 15 m.p.h. When he had travelled 30 miles at that speed he rested for half an hour and then continued on his journey at 10 m.p.h. A motorist left A at 2 p.m. and took the same route. He travelled at 20 m.p.h. for a certain distance and then travelled at 40 m.p.h. for the remainder of his journey, overtaking the cyclist at B, 44 miles from A. Draw graphs to represent the journeys of the cyclist and the motorist from A to B and hence find how far the motorist travelled at 20 m.p.h.

(30 marks.)