

AN ROINN OIDEACHAIS

(Department of Education)

LEAVING CERTIFICATE EXAMINATION, 1960.

MATHEMATICS—ARITHMETIC.

WEDNESDAY, 8th JUNE.—MORNING, 10 TO 12.

All questions to be answered.

Mathematical Tables may be obtained from the Superintendent.

1. A salesman is paid 10% commission on the first £5,000 worth of his sales and 15% commission on the rest of his sales, together with a fixed salary of £300.

- (i) How much is he paid if his sales amount to £5,260 ?
- (ii) How much must his sales amount to in order that he be paid £2,000 ?

[28 marks.]

2. The vertical height of a pyramid is 4 ins. and its base is an equilateral triangle of side 2 ins. Find the volume of the pyramid in cub. ins., correct to three significant figures.

The diameter of a sphere is 2.17 ins. Find its surface area in sq. ins. and its volume in cub. ins., each correct to three significant figures.

[28 marks.]

3. If 5% Stock at 80 gives the same return on money invested as $x\%$ Stock at 100, what is the value of x ?

A man invested half his money in 5% Stock at 80 and the other half in 5s. shares at 10s. each. He had an income of £40 for the first year from those investments, including a dividend of $7\frac{1}{2}\%$ on the shares. How much money did he invest ?

[28 marks.]

4. From the formula

$$(d^2 + l^2)^{\frac{3}{2}} = \frac{M}{F}$$

find, correct to three significant figures, the value of $(d^2 + l^2)$ and hence the value of l , given that $M=120.5$, $F=0.73$ and $d=5$.

[28 marks.]

5. Oil is bought at 2 dollars per gallon (4.546 litres) and sold at 400 Lira per litre. Find the percentage profit, correct to three significant figures.

[Take 1760 Lira = £1 = 2.80 dollars.]

[28 marks.]

6. A loan of £1,000 is to be repaid by two equal instalments, the first to be paid a year hence and the second two years hence. Calculate the instalments, correct to the nearest shilling, compound interest being reckoned at 5% per annum.

[30 marks.]

7. Two motorists X, Y undertake a journey from A to B by the same route. X leaves A at 2 p.m. and travels at 15 m.p.h. Y leaves A at 2.30 p.m. travelling at 48 m.p.h. but when he has travelled 33 miles he stops for 30 minutes and then returns to A at 48 m.p.h. Y leaves A again at 4.30 p.m. travelling at 55 m.p.h. and reaches B at the same time as X. Find graphically, as accurately as you can,

(i) the distance from A to B,

(ii) the times at which X and Y are ten miles apart.

[30 marks.]