

INTERMEDIATE CERTIFICATE EXAMINATION 1965

MATHEMATICS (Arithmetic)

WEDNESDAY, 16th JUNE - MORNING, 10 to 12

All questions to be answered.

Mathematical Tables may be obtained from the Superintendent.

1. Find the cost of 6 tons 17 cwt. 2 qr. at £4 9s. 6d. per ton, correct to the nearest penny.
(25 marks)
2. Find the value of $\frac{20.84 \times (1.046)^2}{\sqrt{0.743}}$, correct to three significant figures.
(25 marks)
3. (a) Simplify:- $1\frac{2}{3} - [(1\frac{2}{5} + 1\frac{3}{4}) \div 2\frac{5}{8}]$.
(b) A field in the form of a square has an area of 10 acres. How long will it take a man to walk completely round the field at the rate of 4 miles per hour?
(1 acre = 4,840 sq. yards)
(30 marks)
4. (a) The average age of 4 students is 16 years and the average age of three of them is 15 years 4 months. What is the age of the fourth student?
(b) 12.75 kilograms of a certain substance costs 70 francs. Find the cost per lb., correct to the nearest penny.
(Take 1 kilogram = 2.2 lb., £1 = 13.5 francs.)
(30 marks)
5. (a) Find the compound interest on £815 for 2 years at 5% per annum.
(b) The difference between the simple and compound interest on a certain sum of money for 2 years at 4% per annum is £1 4s. Find the sum of money.
(30 marks)
6. (a) A house was sold for £3,450 at a profit of 15%. What was the cost price of the house?
(b) If 4 lb. of one brand of tea at 6s. 6d. per lb. is mixed with 8 lb. of another brand of tea at 7s. 3d. per lb., at what price per lb. must the mixture be sold in order to make a profit of $12\frac{1}{2}\%$?
(c) A sells an article to B at a loss of 20%. B then sells the article back to A at a price that is 15 shillings less than A originally paid for it. If B made 10% profit on the transaction, find how much A originally paid for the article.
(30 marks)
7. A heavy solid cylinder is 2 feet high and has a diameter of 2 feet 4 inches. Find, correct to one decimal place, (i) the curved surface area of the cylinder in square feet, (ii) the volume of the cylinder in cubic feet.
The cylinder is placed standing upright in a vertical cylindrical tank the internal diameter of which is four times the diameter of the cylinder. What volume of water in cubic feet, correct to the nearest cubic foot, must be poured into the tank so that the depth of water will be the same as the height of the cylinder?
If 480 gallons more of water are required to fill the tank, find the height of the tank in inches, correct to the nearest inch.
(Take $\pi = \frac{22}{7}$; 1 cubic foot of water = 6.228 gallons.)
(30 marks)