1950
SCOTTISH LEAVING CERTIFICATE EXAMINATION

ARITHMETIC

Tuesday, 7th March—9.30 A.M. to 10.45 A.M.

Only FIVE questions should be answered.

Before attempting to answer any question, candidates should read the whole of it very carefully, since time is often lost through misapprehension as to what is really required.

All the working must be legible and shown in its proper position in the answer, and, when necessary, the different steps should be clearly indicated.

20 marks are assigned to each question.

Marks will be deducted for careless or badly arranged work.

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1. Find the total cost of the following :—

    400 copies of book A at 5s. each, less $3\frac{3}{4}$ per cent. discount ;
    296 copies of book B at 3s. 9d. each, less 5 per cent. discount ;
    39 copies of book C at 8s. 6d. each net ;
    29 dozen notebooks at 26s. per gross.

2. An import duty of 10d. per lb. on a certain commodity produced in one year a revenue of £$3\frac{1}{2}$ millions. The next year the duty was raised to 1s. per lb., but there was a fall of 15 per cent. in the quantity imported.

    (i) How many tons were imported in the first year ?

    (ii) What was the amount of the revenue in the second year ?

3. A man borrows £875, agreeing to pay interest at 4 per cent. per annum. After one year he pays the lender £90, partly to pay the interest due for that year, and partly to reduce the debt. He makes a similar payment of £90 at the end of the second year. What debt is outstanding after the second payment ?

4. A flat-bottomed children's boating pond is in the form of a rectangle with semi-circular ends. Its straight sides are 20 yards long, and it is 8 yards wide. Find how many gallons of water (to the nearest hundred gallons) are needed to fill the pond to a depth of 8 inches.

$$\left(\pi = \frac{22}{7} ; \; 1 \text{ gallon} = 0.160 \text{ cubic foot.}\right)$$

5. A cyclist pedals steadily along a road at a speed of 10 miles per hour. The diameter of his rear wheel is 28 inches. If the chain-driven wheel fitted to the rear wheel has 18 teeth and the number of teeth on the wheel to which the pedals are attached is 45, find the number of revolutions which the pedals make per minute.

$$\left(\pi = \frac{22}{7}. \right)$$

6. On arrival in this country an American tourist exchanges 350 dollars for British money. After spending £80 of this money he converts the remainder and also 150 dollars into francs. How many francs does he obtain (to the nearest franc)?

44055
52746
96801

$$(\text{£}1 = 2 \cdot 80 \text{ dollars, £}1 = 979 \text{ francs.})$$

7. A farmer treated one-third of the acreage he planted in wheat with a certain weed destroyer. His average crop yield per acre was 18¾ cwt. from untreated ground and 22⅕ cwt. from the treated ground. What was the average yield per acre from the whole crop?

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If the wheat sold for 22s. 6d. per cwt. and the weed destroyer cost £2 per acre to apply, which ground gave the greater financial return per acre, and by how much? Treated 2 . 9 : 6

8. A baker wishes to make up 112 lb. of a mixture according to the following recipe :—

8 oz. flour ;	3 eggs ;
1 teaspoonful (¼-oz.) baking powder ;	5 oz. castor sugar ;
	4 oz. margarine.

Assuming that an egg weighs 2 oz., find to the nearest pound the necessary weights of flour, sugar, and margarine. Find also, to the nearest ounce, the weight of baking powder required.

9. An aeroplane undertakes a flight of 2,350 miles in three stages. It averages 300 miles per hour over the first stage which is 960 miles. The second stage takes 2 hours 15 minutes at an average speed of 280 miles per hour. If the journey is completed in a total flying time of 9 hours 15 minutes, what was the average speed for the third stage of the journey?

10. Gas charges in a certain area were 8·4d. per therm for the first 5,000 cubic feet consumed and 6·5d. per therm thereafter. 1,000 cubic feet were equivalent to 4·50 therms. What was the charge to a householder who used 9,000 cubic feet between meter readings on the 14th October and the 10th January following? What was the average cost of the gas per day (to the nearest halfpenny)?