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INTERMEDIATE CERTIFICATE EXAMINATION, 1932.

MATHEMATICS

ARITHMETIC—Paper B.

FRIDAY, 3rd JUNE.—MORNING, 10.45 A.M. TO 12.15 P.M.

Each item (*a*), (*b*), (*c*), (*d*), (*e*), (*f*) in Section I will be counted as a *half-question.* The total number of questions answered should not exceed *five*, every pair of items from Section I. being counted as a whole question.

(Candidates should see that answers to questions in excess of *five* are cancelled).

Mathematical Tables may be obtained from the Superintendent.

SECTION I.

(Each item (*a*), (*b*), (*c*), (*d*), (*e*), (*f*), in this Section carries 13 marks.)

(*a*) Find the cost of 29 cwt. 3 qrs. 22 lbs. at £4 18s. per cwt.

(*b*) Calculate, correct to the nearest penny, the total cost in British money of a book published in 35 parts and sold at 3 dollars 45 cents each part

[£1=4·87 dollars=487 cents.]

(*c*) Find, correct to two places of decimals, the value of :

$$\frac{567^2-395^2}{516^2+344^2}$$

(*d*) By what quantity should $(1-\frac{1}{9})(1-\frac{1}{10})(1-\frac{1}{11})(1-\frac{1}{12})$ be multiplied so as to give $(1+\frac{1}{9})(1+\frac{1}{10})(1+\frac{1}{11})(1+\frac{1}{12})$ as product ? Express the result in its simplest form.

(*e*) How many lengths of 2·18 inches could be cut off a bar of metal a yard long ? What would be the length of the piece left over ?

(*f*) The sides of a triangle are 13′, 20′, 21′ respectively in length and the shortest perpendicular is 12′ long. Calculate the lengths of the two other perpendiculars.

Section II.

(Each question in this Section carries 32 marks.)

1. Find which is the greatest and which is the least of the following :

$$\frac{17}{37}, \frac{53}{116}, \sqrt{0{\cdot}209}.$$

2. During a week in a certain place the average number of hours of sunshine per day was 6·93. The average for the first three days was 7·06 and that for the last three days was 5·81. Find the number of hours of sunshine on the fourth day.

3. Using the accompanying statistics for Saorstát Éireann for the year 1926, arrange the provinces in order of density of population :

Province	Area of Land	Population
Connacht	4,230,822 acres	552,907
Leinster	8,851,136 ,,	1,149,092
Munster	5,962,803 ,,	969,902
Ulster (3 Counties) ..	1,979,720 ,,	300,091

4. The difference between the areas of two fields is $8\frac{2}{5}$ acres and one-sixth of the area of one is equal to two-fifths of the area of the other. Find the area of the smaller field and the radius (to the nearest yard) of a circular field whose area is equal to that of the two taken together.

5. A rectangular block measures $26'' \times 18'' \times 8\frac{1}{2}''$. Find :

(i) its total surface area,

(ii) the length of the edge of a *cube* of equal volume.

6. A man invests £150 at the beginning of each of three consecutive years at $4\frac{1}{2}\%$ per annum, Compound Interest. How much will his investments be worth at the end of the third year ?

Assuming that Simple Interest only is allowed, what rate per cent. would produce exactly the same amount

7. A dealer purchases turkeys at 1s. 3d. per lb. and sells them at 1s. $8\frac{1}{4}$d. per lb. In both buying and selling he uses—always to his own advantage—a false balance in which all weights in the ratio of 27 to 28 will balance one another. What is his percentage profit ?