Examination Department

142D EXAMINATION

ADVANCED ARITHMETIC

Monday, January 25, 1897 — 9:15 a. m. to 12:15 p. m., only

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100 *credits, necessary to pass,* 75

Answer 10 questions but **no more.** *If more than 10 questions are answered only the first 10 of these answers will be considered. Give each step of solution, indicating the operations by appropriate signs. Use cancelation when possible. Reduce fractions to lowest terms. Express final result in its simplest form and mark it Ans. Each complete answer will receive 10 credits.*

1 Define *reduction, exchange, bank discount, proportion, similar repetends.*

2 Write in words .349, 300.049, $\frac{340}{9000}$, $300\frac{40}{9000}$, $300\frac{49}{1000}$.

3 If $\frac{5}{8}$ of a barrel of flour costs $4.55, how much will $\frac{11}{15}$ of a barrel cost? (Write a complete analysis.)

4 If stock bought at 10% discount pays 5% on the investment, at what price should the same stock be bought to pay 6%?

5 Prove that if the sum and the difference of any two odd numbers are taken, *one* of these results will be a multiple of four.

6 Divide .475 by .3750.

7 897 bushels of wheat are divided among A, B, C and D, so that A receives $2\frac{1}{4}$ bushels as often as B receives $4\frac{3}{4}$ bushels, C $6\frac{3}{8}$ bushels, and D $9\frac{5}{8}$ bushels; how many bushels has each?

8 If I buy for 10% less I shall gain 15% more, selling price remaining the same; what is my rate of gain?

9 A tailor has 24 garments worth $144. He has coats at $12, trousers at $5, and waistcoats at $2. How many garments of each kind has he?

10 An article is bought at a certain price per pound avoirdupois and sold at the same price per pound Troy; find the rate of gain or loss.

11 A, with 5 days' help from B, can build a wall in 8 days; B, with 5 days' help from A, can build it in 9 days. In how many days can A and B working together build the wall?

12 A school-house costing $8500 is to be built in a district whose property is valued at $1,460,478. The cost of collection is 3%. Find the amount of tax and the rate.

13 Two thirds of A's money is to four fifths of B's as 3 to 4. Together they have $1520. How much has each?

14 A man borrowed $3000 agreeing to pay principal and interest in five equal annual instalments. If the rate of interest was 7%, how much was each annual payment?

15 For how much should a hat costing $4 be marked so that the gain would be 25% after 20% had been deducted from the marked price?