

University of the State of New York

Examination Department

135TH EXAMINATION

ARITHMETIC

Tuesday, March 24, 1896 — 9:15 a. m. to 12:15 p. m., only

100 credits, necessary to pass, 75

Answer questions 1-5 and five of the others but no more. If more than five of these other questions are answered only the first five of these answers will be considered. Give all operations (except mental ones) necessary to find results. Reduce each result to its simplest form and mark it Ans. Each complete answer will receive 10 credits.

- 1 Define numeration, multiple, power, square root, ratio.
- 2 Find the prime factors of each of the following numbers: 42, 48, 126, 144. Indicate the combination of factors necessary to produce (a) the greatest common divisor of these numbers, (b) their least common multiple.
- 3 What part of a square meter is a square yard? What part of a cubic meter is a cubic yard? Express results in decimals of three places.
- 4 Find the amount of \$486.50 for 1 year, 5 months and 17 days at $5\frac{1}{4}\%$ simple interest.
- 5 Solve the following by analysis, writing out the work in full: If $\frac{2}{3}$ of an article costs $\frac{2}{3}$ of a dollar what will $\frac{3}{4}$ of it cost?
- 6 Simplify the following: $\frac{4\frac{1}{2} + 2\frac{2}{3}}{4\frac{1}{2} \times 2\frac{2}{3}} \times 72$
- 7 Find the cost of the following bill of goods: 1840 lbs. hay at \$14 a ton; 2460 lbs. coal at \$5 a ton of 2240 lbs.; 5120 lbs. oats at 24 cents a bushel of 32 lbs.
- 8 Find the entire surface of the four walls and ceiling of a room 18 feet long, 14 feet wide and 9 feet high.
- 9 Find the cost, at \$14 a 1000 feet, board measure, of 6 pieces of timber, each 24 feet long, 10 inches wide, 8 inches thick.
- 10 A house and lot cost \$5000; the insurance is \$25, taxes are \$50 and repairs \$75 annually; what rent must be received in order to realize 6% on the investment?
- 11 What is the per cent profit on stocks bought at 90 and sold at 110?
- 12 An agent receives \$541.62 with which to buy flour; how much will he buy, at \$4.50 a barrel, after deducting his commission of 2%?
- 13 Find the proceeds of a bank note for \$560 discounted for 90 days at 6%.
- 14 How many rods of fence are required to inclose a square field containing $24\frac{1}{4}$ acres?
- 15 Find the contents of a cylindrical vessel whose diameter is 8 inches and whose depth is 1 foot.