

## Examinations Department

116th examination

## ARITHMETIC

Tuesday, September 26, 1893 — 9:15 a. m. to 12:15 p. m., only

100 credits, necessary to pass, 75

Answer any 10 questions but no more. If more than 10 questions are answered, only the first 10 of these answers will be considered. Each complete answer will receive 10 credits.

- 1 Define *denominator, factor, interest, true discount, involution.*
- 2 Express in Roman notation 1492 and 1893. Express in words the sum of 609.0031 and 394.048.
- 3 From sixty subtract forty-seven and sixteen ten-millionths and express the remainder in Arabic notation.
- 4 Simplify and express decimally  $\frac{18\frac{1}{2} \times 7\frac{2}{5}}{8\frac{3}{4} - 6\frac{1}{5}}$ .
- 5 Appleton union school bought of Whithall, Tatum & Co. June 1, 1893, glassware to the amount of \$32.40 list price, from which the regular discount is 40%. A further cash discount of 5% is allowed. Make and receipt the bill.
- 6 Write a 30 day note the proceeds of which when discounted on the day of making at a New York bank shall be \$514.
- 7 Find the square root of 8.5849.
- 8 A room 6 meters long, 4 meters wide and 3 meters high has opening from it one door 2 meters high,  $1\frac{1}{2}$  meters wide, and two windows each  $2\frac{1}{2}$  meters high, 1 meter wide. Find the cost of plastering the walls and ceiling at 15 cents a square meter, deducting half the openings.
- 9 Find the volume of a square prism the side of whose base is 2 meters and whose height is 3 meters. Find the volume of a cylinder whose diameter is 2 meters and whose length is 3 meters.
- 10 Find the amount due this day on a note given in New York May 10, 1890, for \$500 with interest, a payment of \$35 having been made July 5, 1891.
- 11 Find the cost of the ties and rails for one mile of single track railway, the ties being placed 2 feet apart from center to center and each rail weighing 90 lbs a yard, if the ties cost 40 cents each and the rails cost \$29 a ton of 2240 lbs.
- 12 Find the cost of the shingles required to cover a roof 40 feet long, 20 feet wide, at \$5 a thousand, if it requires 36 shingles to cover 5 square feet.
- 13 Find the cost of carpeting a room 15 feet long, 12 feet wide with carpet 27 inches wide, at 75 cents a yard.
- 14 A bin 6 feet long, 2 feet wide,  $1\frac{1}{2}$  feet high is filled with oats, worth 40 cents a bushel ( $2150.42$  cubic inches = 1 bushel). Find the value of the oats.
- 15 Find the cost of paving and curbing one mile of street, the paving being 30 feet wide and costing \$2.75 cents a square yard and each line of curbing costing 30 cents a linear foot.