University of the State of New York

Examinations Department

78th examination

ARITHMETIC

Tuesday, Nov. 24, 1891—9 : 15 a. m. to 12 : 15 p. m., only

48 *credits, necessary to pass,* 36

NOTE.—Give each step of solution, indicating the operations by appropriate signs. Use cancellation when possible. Reduce fractions to lowest terms. Express final result in its simplest form and mark it *Ans.*

1. Give an example of each of the following: (*a*) prime factor; (*b*) composite number; (*c*) the metric system; (*d*) a promissory note; (*e*) personal property. 5

2. A business man has cash on hand January 1, $240, and on deposit in bank $528.80. During January he received $485 50, paid out $562.80 and deposited in bank $55. Find the amount of cash on hand and the amount on deposit January 31. 3

3. Find the least number of bushels of grain that can be exactly measured either by a three-quart, a peck, a twenty-quart or a bushel measure. 3

4. If a grocer should sell a tub of butter at 22 cents a pound, he would gain 168 cents; should he sell it at 17 cents a pound, he would lose 112 cents. Find the weight of the butter and the cost per pound. 4

5. What would be the cost of 50 boards, each 12 feet long, 8 inches wide and $1\frac{1}{2}$ inches thick, at $4\frac{1}{2}$ cents a foot, board measure? 2

6. If $130 be paid for a watch and chain, and the cost of the watch be $\frac{3}{5}$ more than the cost of the chain, what would be the cost of each? (Solve by analysis and give the analysis in full.) 4

7. How many hectoliters of water will a cistern hold which is 5 meters long, 4 meters wide and 3 meters deep? 4

8. Three families consisting of 3, 4 and 5 persons respectively, camped out during the summer months, agreeing that the expenses should be divided in the ratio of the number of persons in each family. The expenses amounted to $606; what number of dollars should each family pay? 3

9. A merchant sold goods for $1125; half he sold at an advance of 25% on the cost; two-fifths at an advance of $12\frac{1}{2}$%, and the remainder at $\frac{1}{2}$ the cost. What did he pay for the goods? 5

10. A note of $350, dated October 17, 1865, was paid April 11, 1868, with interest at 7%. Find the amount paid. 3

11. The proceeds of a 2-months' note, discounted by a bank at 6%, were $800. Find the face of the note. 2

12. How many dollars would a man gain in buying 240 shares of railroad stock at $3\frac{3}{8}$% discount and selling them at $1\frac{7}{8}$% premium? 2

13. A factory valued at $75,000 was insured for $\frac{2}{3}$ of its value. If the premium was $625, what was the rate of insurance? 2

14. The assessed value of the property in a town is $3,265,000, and the tax to be raised on the property is $39,180. Find (*a*) the rate of taxation; (*b*) the amount of A's tax, whose property is assessed at $15,000, and who pays for 3 polls at $1.25 each. 3

15. Find the diagonal of a cubical block each of whose edges is 20 inches. 3