## High School Department

172D EXAMINATION

# ARITHMETIC

**Thursday,** January 30, 1902—9.15 a. m. to 12.15 p. m., only

*Answer the first five questions and five of the others but* **no more.** *If more than five of the others are answered only the first five 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. Papers entitled to 75 or more credits will be accepted.*

1 Simplify $\frac{\frac{7}{16}+1\frac{1}{2}\times\frac{2}{5}+\frac{1}{8}}{1\div(\frac{5}{6}-\frac{1}{15})}$ and express the result both as a common fraction and as a decimal fraction.

2 A rectangular tank 2 meters 5 decimeters long and 1 meter 4 decimeters wide holds 28.7 hectoliters; find the depth of the tank.

3 Find the simple interest of $836 at 2½% from May 31, 1901 to the present date.

4 Find the cost, @ $15 per M, of 75 pieces of lumber each $14'\times16''\times1\frac{3}{4}''$.

5 A man bought a farm of 196 acres for $9800 and after spending $980 for improvements, sold the farm at $66 an acre; what was his per cent of gain?

6 Reduce $\frac{5423}{7163}$ to its lowest terms.

7 Find the cost, @ 60¢ a yard, of carpeting a room 16 feet 4 inches wide and 21 feet 6 inches long with carpet 27 inches wide, if the strips of carpet run lengthwise.

8 Find the net proceeds on the sale of 576 barrels of flour @ $7.50 a barrel, the commission being 3½% and the freight and storage being 33¢ a barrel.

9 Find the square root of 3 to *three* decimal places.

10 How many bushels will a bin hold that is 7 feet long, 4 feet wide and 3½ feet deep? [2150.4 cubic inches=1 bushel.]

11 Find the proceeds of a 60 day note for $830 without interest, dated December 21, 1901 and discounted today at a bank at 6%.

12 A merchant buys cloth at $1.20 a yard and marks it so as to sell it at a discount of 20% from the list price and still gain 20%; find the list price of the goods.

13 A house worth $12,000 was insured for ⅞ its value by three companies; the first took ⅓ the risk at ⅛%, the second ⅕ the risk at ¼%, and the third the remainder at ⅜%. What was the whole premium paid?

14 What is the loss on 40 shares of stock bought at $109\frac{7}{8}$ and sold at $106\frac{3}{8}$, brokerage being ⅛% in each case?

15 Define *five* of the following: common fraction, common multiple, numerator, composite number, proportion, evolution, discount.