

## High School Department

162D EXAMINATION

## ARITHMETIC

Tuesday, January 23, 1900—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 Define five of the following: denominator, evolution, brokerage, prime factor, reciprocal, premium, indorsement.

2 Simplify  $\frac{1\frac{1}{2}}{2\frac{1}{4}} \times \frac{4.375 \div \frac{1}{2}}{5\frac{1}{2} - \frac{1}{3}}$

3 Find the weight of a bar of iron  $6\frac{1}{2}$  centimeters wide, 26 millimeters thick and 40 centimeters long, iron being 7.8 times as heavy as water.

4 Find the greatest common divisor (highest common factor) of 12,032 and 16,403.

5 Find the amount of \$380 at 5% simple interest from March 9, 1898 to the present date.

6 A and B together have \$70; C has twice as much as B and A has three times as much as C. How much has each?

7 Reduce  $\frac{1}{2}\frac{1}{3}\frac{1}{4}$ ,  $\frac{2}{3}\frac{1}{4}\frac{1}{5}$  and  $\frac{3}{4}\frac{1}{5}\frac{1}{6}$  to decimals. Add these decimals and express their sum as a common fraction in its simplest form.

8 Find the cost, at 12 cents a square yard, of plastering the four walls and ceiling of a room  $1\frac{1}{2}$  feet by 12 feet and 9 feet high, allowing 15 square yards for doors and windows.

9 Find in liters the capacity of a tank  $1\frac{1}{2}$  meters deep,  $4\frac{1}{2}$  meters long and  $3\frac{1}{2}$  meters wide.

10 Find the cost of the following items of lumber:

3 pieces  $8' \times 6' \times 12'$  at \$17 a 1000 feet

30 "  $12' \times 2' \times 14'$  " 20 "

20 "  $10' \times \frac{1}{2}' \times 16'$  " 25 "

11 Find the square root of 43 to three decimal places.

12 An agent charged his principal \$106.25 (commission being  $2\frac{1}{2}\%$ ) for buying 5000 bushels of wheat; the freight charges, etc. amounted to \$43.75. How much a bushel did the wheat cost the principal?

13 A speculator buys bonds whose par value is \$10,000 at  $113\frac{1}{4}$  and sells them at  $115\frac{1}{4}$ ; how much does he gain if brokerage is  $\frac{1}{4}\%$  in each transaction?

14 Find the proceeds of a note for \$425 at 90 days when discounted at 6%.

15 Find the cost, at 75 cents a square yard, of paving a circular court whose radius is 40 feet.