

To Mr. Scott, true friend, and noble guide
Farewell, and if the seeds thou'st sown shall grow,
A bounteous crop, a crop of precious grain
Will stand to thy account. So kind thou'st been
Leading us gently o'er the roughest paths
Surprising us with flowers by the way.
Thy life has taught us true nobility,
And given us strength our journey to pursue.
But we must part, and Heaven's choicest gifts
Be unto thee, and thine, now, and for aye.

The Science Master, has our lives made glad.
His sympathies have been a soothing balm;
He shared the feelings of each student's heart,
And fain would see success attend our strife,
Our thanks to him, with love and wishes kind.

A skilful Workman has our voices tuned
And taught us how to value music sweet;
May all his life be like a joyous song
His soul be filled with harmony divine.

Friend Sawyer, fare-thee-well, may angels bright
Guide thee on earth and write thy name in Heaven.

Now, though the upright Cope takes special care
To train the muscles, mould the common clay,
Know that his work is noble; as 'tis hard
For mind entrained with a body weak
To rise and drag along the weary weight.

Our busy Drawing Master has worked hard
To teach us where to place the light and shade,
Our wish for him is, that the Artist great
May trace his future life with pencils soft.

To you our teachers, one and all adieu,
Results will ever flow from work you've done,
Your impress has been stamped upon our souls.
We shall mould other lives; thus, then you live
Through countless ages: and the good you do
Cannot be reckoned till the Judgment day.

Fair Capital, whose arms around us were
As a fond mother's round her darling boy;
May thy sons and daughters who go forth alone
Be kindly treated, e'en as we have been.

But hark! The clock of Heaven now chimes the hour
When we as fellow-students separate,
We feel the sting of parting more, no doubt,
Since not a note discordant has been heard
Resound within these walls since first we came.

Our happy meeting here we'll keep in mind,
Our very hearts, we know, will swell with joy
As memory brings us back to the reviews,
The spice of life we ne'er forgot, but laid
The work of each week by with mirth and song;
And were it not for all that home holds dear,
We could not raise our eyes to say "Good bye,"
But, as the hour of parting is at hand
We'll think of coming days and earnest work.
We'll live to guard our grand, our noble trust;
Our lives, the lives of children whom we teach.
For God and Country may our lives be spent,
Till the reunion bye and bye, Farewell.

LIZZIE BEATRICE TOYE.

Ottawa Normal School, December 19, 1884.

Correspondence.

TO CORRESPONDENTS.—Under the head of Educational Notes and News, will be found the answer to the inquiry of a correspondent, in reference to Literature for entrance examinations to High Schools, next July.

Examination Papers.

SECOND CLASS PROFESSIONAL EXAMINATIONS AT THE ONTARIO NORMAL SCHOOLS, DECEMBER 1884.

MENTAL ARITHMETIC.

Examiner—J. C. GLASHAN.

1. Bought 500 lbs. of sugar, part at the rate of 10 cts. per lb., the remainder at the rate of 8 cts. per lb.; the whole costing \$47, How many pounds were there at 8 cts. per lb.?

2. A clock standing near a stove loses at the rate of 57" per hour when the fire in the stove is alight but gains at the rate of 95" per hour when the fire is not burning. One day at noon the clock was set right and the next day at noon it was observed to be right again. How long was the fire in the stove alight during those twenty-four hours?

3. If the telegraph poles by the side of a railway be 60 yards apart, what fraction of the true speed will the errors be in reckoning the speed of the train to be twice as many miles per hour as the train passes poles per minute.

4. A man has a pint measure empty, a quart measure full of water and a gallon measure full of milk. He fills the pint measure from the quart measure, the quart measure from the gallon measure, and then empties the pint measure into the gallon measure. Then he does three times. How much water is there then remaining in the quart measure?

5. Bought goods for \$150; sold $\frac{1}{2}$ of them at a profit of 20 per cent., $\frac{1}{3}$ of them at a profit of 10 per cent., and the remainder for \$20. What was my profit on the whole?

6. A man who has a certain sum of money to invest finds that if he buy 144 Building Company stock paying 6 per cent, his income will be \$50 a year more than it would be were he to buy $3\frac{1}{2}$ per cent. Government bonds at 91. What sum has he to invest?

7. The engine of an express train is making 180 strokes per minute. If the driving-wheels be 7 ft. in diameter, at how many miles per hour is the train running?

8. How many square feet in the surface of a cylindrical pipe 420 ft. long and $1\frac{1}{2}$ inches in diameter?

PHYSICS.

Examiner—J. C. GLASHAN.

Fifty per cent. of the whole will be considered a full paper.

1. What is the difference between force, momentum, and energy? Explain by illustrations.

Two boys of equal weights jump to the ground, one from a height of 4 feet, the other from a height of 16 feet. Compare (1) the impulses, (2) the energies, with which they strike the ground.

2. Distinguished between volume, density and mass.

A Cubic inch of mercury at 32°F, weighs 7.8588 ounces; a cubic foot of air at 32°F, and under a pressure of 2116.4 lbs. per square foot weighs 1.2926 ounces. Compare the volumes, the masses, and the densities in the two cases.

3. Explain how one is able to suck up water through a tube. Would mercury rise in the same way and to the same height?

4. Why does oil rise in the wick of a lamp?

In which would the mercury stand the higher under the same air pressure, in a barometer with a half-inch bore, or in one with an eight of an inch bore? Why?

5. What is the difference between heat and temperature? Explain by illustrations.

A pound of iron at 182°F, is plunged into 10 lbs. of water at 36°F; find the resulting temperature, the mean specific heat of iron within the range of 36°F. to 182°F. being 11.

If the length, the breadth and the height of a room be 25 ft., 20 ft and 10 ft. respectively, how many pound-degrees of heat will be required to raise the temperature of the air in the room 36°F., the pressure of the air remaining constant and its average density being 1.28 ounces per cubic foot; the specific heat of air at constant pressure being .2375.