66 shiftings weighing 11b troy?

6. Distinguish between bank discount and true discount? If the simple interest on a sum of money for a given time and rate is  $\frac{1}{n}$  of the sum itself, show that the true discount is  $\frac{1}{n+1}$  of that sum ?

7. Reckoning commercial discount at 5% a person would receive \$14.52 less than the nominal value of a note which has a year to run; what should he receive for the note, if true discount only were deducted ?

8. What must a person have invested in Bank of Commerce Stock at 120, and paying 4 ( half yearly dividends, if a transfer of 65 of his capital to Dominion Ban't Stock at 130, and paying 41 half-yearly dividends, makes a difference of \$5 in his semiannual income?

9. A merchant in Montreal drew on Hamburg for 6000 guilders, at \$.415; how much more would be have received if he had ordered remittance through London to Montreal, exchange at Hamburg on London being 114 guilders for £1, and at London on Montreal 94  $Z_s$  brokerage being 14 / for remitting from London?

10. The length of an iron cylindrical vessel with closed ends is 3 feet, and its outside circumference is 36 inches, the metal being an inch in thickness. Find its weight when filled with water, iron being 71 times heavier than water, and water 621 lbs. per cubic foot.

# 1V.

#### FIRST CLASS TEACHERS.

1. Define and investigate methods of finding the G. C. M. and the L. C. M. of two or more fractional numbers.

Three watches hang side by side and all show 12 o'clock at the time of observation; the first is known to gain 10 minutes, and the second to lose 10 minutes in 12 hours, while the third keeps accurate time. In what time will all the hands first be at 12 together?

2. A grocer bought a quantity of tea at 40 cents per 1b., and fixed a price on it, to gain  $23\frac{1}{27}$ , but in selling it he inadvertently used a pound weight which was 4 oz. too light, thus gaining \$31.20 more than he would have gained if the weight had been true. How much did he buy?

8. Show that if the true discount for a sum of money for a given time and rate be  $\frac{a}{b}$  o. that sum, then the interest will be  $\left(\frac{a}{b+a}\right)$ 

(1.) The interest on a certain sum for 6 years is \$261, and the discount for the same time is \$180. Find the sum and the rate per cent.

(2) The interest on a certain sum is \$180, and the discount for the same time and rate is \$150. Find the sum.

4. How much U. S. currency will be required to purchase U. S. 6 / bonds, interest payable in gold, to give an income of \$1,113 in currency, gold being at 106, and the broker's commission  $\frac{3}{3}$  % on the par value of the bonds?

5. I bought a quantity of tea from Thwaite, Eby & Co., Toronto, who allowed me a discount of 4 per cent. on the price charged for the tea and accepted for the reduced amount my note payable in 6 months; I sold the tea at once for a note of \$510.51 payable in 3 months, and allowing money to be worth  $8_{/2}$  per annum, I found I had made a profit of  $18_{11}^{22}$  per cent. Find the first price charged for the tea.

6. From 2 lbs. of standard gold are coined 89 guineas, and from 1 lb. standard silver 66 shillings,  $8\frac{1}{2}$  of standard gold being alloy, and  $7\frac{1}{2}$ % of standard silver. If 24 pennies are coined from 1 lb. avoirdupois, calculate the ratio of the values of gold and

copper. 7. Find the compound interest of \$4000 at 10  $_{10}$  for  $8\frac{1}{2}$  years (payable yearly).

8. A man invested a certain sum in Bank of Commerce Stock at 125 and paying  $4\frac{1}{2}$  half-yearly dividends;  $44\frac{7}{2}$  more than that sum in Dominion Bank Stock at 135 and paying  $4\frac{1}{2}\frac{7}{2}$  half-yearly dividends; and  $39\frac{1}{2}\frac{7}{2}$  less than that sum in Consolidated Bank Stock at 95, and paying  $3\frac{1}{2}\frac{7}{2}$  half-yearly dividends; his half-yearly income from the second investment was \$12.75 less than from the other two two to the second investment in the second investment is the second investment in the second investment is the second investment in the second investment in the second investment in the second investment is set in the second investment is set in the second investment is set in the second investment in the second investment is set in the second investment in the second investment is set in the second investment in the second in the second investment in the second in the se from the other two together. Find the amount invested in each kind of stock.

accurate time. When will all the *minute* hands be next at 12 9. To do a certain piece of work, for which \$120 is paid, B together? Would take  $2^{\circ}_{1}$  times as long as A and C together, C 43 times as 5. How many ounces of coinage gold are equal in value to 142 long as A and B together, and all three working together actually onnecs of coinage silver, 1869 sovereigns weighing 100b, troy, and do the work in 24 days. Divide fairly among them the money pand for the work.

10. (1) The base of an equilateral triangle falls on the diameter of a semicircular are, and its vertex is in the middle point of the are; the length of a side of the triangle being 8 feet: find the diameter of the circle.

(2) The town A is 30 miles from B, B 25 miles from C, and C 20 miles from A; find where a house must be erected to be equally distant from A, B, and C.

## ENGLISH GRAMMAR AND ETYMOLOGY.

#### Ι.

# ADMISSION TO HIGH SCHOOLS. 3

# Ecaminer: S. A. MARLING, M. A

Values. 1. Parse :

Values.

45

14

16

14

- Not seeing his way very clearly out of these difficulties, 40 Charles was fortunate enough to discover an agent equally skilled in baffling his adversaries' schemes and in concealing his own.
- 10 2. Analyse :

" The yeomen looked on each other confusedly and with hesitation, the apprehension of so strange a danger prevailing with those who feared no other."

- 3. Write sentences showing the several ways in which 8
- 5. Write sentences showing the several ways in which "who" and "that" are used. 4. Give the plural of 'hero,' 'crocus,' 'genus,' 'genius,' 'valley,' 'lily,' 'bandit,' 'Swiss,' 'appendix,' 'sheep,' '+,' s,' 'cargo;' and the possessive singular and plural of 'beau,' 'mouse,' omnibus,' 'German, 'Mary,' 'ox,' 'lieutenant-governor,' 'court-martial.' 5. What is the meaning of Word Inflection, Parsing, 14
- 5. What is the meaning of Word, Inflection, Parsing, 4 Weak Conjugation ?
- 9 6. Write the present participle, the past participle, and the second person singular of the present and past tenses of sit, do, go, catch, eat, tear, set, rely, lose.
- 7. Correct any mistakes you detect in the annexed sen-15 tencer giving your reasons :
  - (a) If he was me, he would have done very different. (b) He made a few memorandas to assist his clerk's
  - memory.
  - (c) Jane got on quicker in her stadies than he.
  - (d) Each of you must attend to your own desk.
  - (e) I hardly know whom to make my complaint to.

### II.

### THIRD CLASS TEACHERS.

Examiner : S. ARTHUR MARLING, M. A.

"But what would appear incredible to you, were the fact less public and notorious, is that a gang of hardened villains who had been confined, and got out of prison when the wall fell, at the first shock, were busily employed in setting fire to those buildings which stood 'some char ce of escaping the general destruction."-(DAVY).

- 1. Divide this passage into propositions, stating their 20kind and their relation to one another, and fully analyze them.
  - 2. Parse the words printed in italics.
  - 3. Give the meaning of the Latin prefixes and affixes in the above extract.
- 4. Why are certain verbs called *irregular*? By what other names are they also known, and why? Write the 22present tense third person singular, also the present participle, the past tense second person singular, and the past participle of shear, slay, chide, eat, win, sit, lie, lose, die, spit.
  - 5. Give examples to show the indefinite and also the definite use of the pronouns he, it, one, who.
  - 6. Write the plural of simile, spoonful, scraph, courtmartial, portfolio, James, crisis, x, 5; distinguish farther and further, older and elder, latest and last; and say what kinds of adjectives cannot be compared,