ALGEBRA.

1. Distinguish between an equation and an identity. Give an example of each. What value of p makes $(x-3)^2 (x-1)(x-5) = p$ an identity?

2. Simplify the expression:

$$\frac{ab}{(c-a)(c-b)} + \frac{bc}{(a-b)(a-c)} + \frac{ca}{(b-c)(b-a)}$$

3. Solve if you can the simultaneous equations.

$$x + 71\,y + 53\,z = 400$$
$$3\,x + 73\,y + 51\,z = 401$$
$$19\,x + 89\,y + 35\,z = 408$$

Explain.

4. Given $\dfrac{1}{1-\sqrt{1-x^2}} - \dfrac{1}{1+\sqrt{1-x^2}} = \dfrac{\sqrt{3}}{x^2}$ to find the value of x.

5. There are two numbers in the triplicate ratio of $4:1$ whose mean proportional is 32. What are the numbers?

6. If the sum of n terms of an Arithmetical Progression is always equal to n_2 find the first term and the common difference.

7. To find two numbers such that their sum, their product, and the difference of their squares shall be all equal.

UNIVERSAL HISTORY.

1. Name the chief Oriental Nations of Antiquity, and classify them as to race.

2. Mention the four grand divisions of Jewish history from the Exodus to the absorption of Judea in the Roman Empire, with a short sketch of the last period.

3. Write notes on the Roman Empire as to (1) Government, (2) Civilizations embraced, with their respective areas. Compare the Empires of Rome and Great Britain.

4. Mention the evils of Feudalism, and discuss the influences by which that system was undermined.

5. Give an outline of the development of Russia as a European power.

6. Write a sketch of the history of France under the Directory.

PRACTICAL MATHEMATICS.

1. How many acres are contained in a quadrilateral field, whose opposite angles are supplementary, its sides being 600, 650, 700 and 750 links.

2. From a cone, of which the circumference of the base is 10 ft., and its slant height 30 ft., a cone has been cut off, of which the slant height is 8 ft. Required the whole surface of the remaining frustrum.

3. Draw a figure illustrating the definitions of the following terms in Navigation: (a) Rhumb-line, (b) course, (c) distance, (d) difference of latitude, (e) departure.

4. How much less will it cost to fence 40 acres of land in the form of a square, than in the form of a rectangle of which the length is $2\frac{1}{4}$ times the breadth, the fence costing $2.25 per rod.

5. Explain what is meant by Great Circle Sailing.

6. Required the area of the frigid zone, the height of the segment being 327.2, and the diameter 7912 miles, the earth being considered a perfect sphere.

7. The perimeter of a right-angled triangle is 25, and the radius of the inscribed circle is 2, determine the sides of the triangle.

Second-Class Licenses, (Grade C.)

BRITISH HISTORY.

1. Describe the Feudal System.

2. Summarize the events of the reign of Richard II.

3. Describe the circumstances under which "the roar of foreign guns was heard for the first and last time by the citizens of London."

4. Sketch the career of one of the following: "Earl of Warwick," "Earl of Strafford," "the great Commoner," "Warren Hastings."

5. At what date did the Union of Great Britain and Ireland take place. Specify the terms of the Union.

6. What are the chief branches of the Royal Prerogative.

BRITISH AMERICAN HISTORY.

1. What two remarkable victories were gained by Colonel de Salaberry and Colonel Morrison. State one important consequence of these victories.

2. What was the nature of the long standing dispute respecting the minerals of Nova Scotia? When and how was it settled?

3. To which of the contending powers was each of the following colonies assigned by the Treaty of Utrecht: Canada, Newfoundland, Nova Scotia, Island of St John, Cape Breton.

4. When and under what circumstances did New Brunswick become a separate Province?

5 Describe the principal events which occurred in Nova Scotia during the administration of Wentworth.

GENERAL GEOGRAPHY.

1. Define Climate, and state influences affecting it.

2. In what direction do the Peninsulas of the world generally extend? Give illustrations and exceptions.

3. Name the States of South America with their capitals and chief cities.

4. Describe Low Europe.

5. Name the United States bordering on the Mississippi River, with their respective capitals.

6. Draw a map of Asia with the chief mountain ranges and three largest rivers clearly indicated.

BRITISH AMERICAN GEOGRAPHY.

1. Name the Counties of New Brunswick (a) bordering on the State of Maine, (b) bordering on the Province of Quebec, with the capitals in every case.

2. Describe Prince Edward Island as to situation, area, surface and soil, and political divisions.

3. How many of the five great North American River Systems are represented by the Rivers of the Dominion? Name the longest River of each System included in your answer.

4. Locate approximately the point in Nova Scotia furthest from the sea.

5. Name the waters through which you would pass in sailing from Moncton to Manitoulin Island.

6. In what County and Province is each of the following places:—Port Mulgrave, Douglastown, Lachine, Georgetown, Guelph.

GEOMETRY.

1. Define a triangle, show how many kinds of triangles there are according to the variation both of the *angles* and of the *sides*.

2. If from the ends of the side of a triangle there be drawn two straight lines to a point within the triangle these will be together less than the other sides of the triangle, but will contain a greater angle.

3. Show that the angle contained between the perpendiculars drawn to two given straight lines which meet each other is equal to the angle contained by the lines themselves.

4. If a straight line fall upon two parallel straight lines it makes the two interior angles upon the same side together equal to two right-angles, and also the alternate angles equal to one another, and also the exterior angle equal to the interior and opposite upon the same side.

5. The two triangles formed by drawing straight lines from any point within a parallelogram to the extremities of its opposite sides are together half of the parallelogram.

6. To a given straight line to apply a parallelogram, which shall be equal to a given triangle, and have one of its angles equal to a given angle.

7. In a rhombus the squares of all the sides are together equal to the squares of the diagonals.

BOOK-KEEPING.

(Candidates who prefer may substitute for this paper that on French, given below. If papers on both subjects are handed in by same candidate, no credit will be given for either.)