

4. State the principle upon which the stereoscope is constructed.
5. Explain the structure and growth of bone, and tell how the teeth are developed.
6. State as fully as you can the injurious effects of a bad diet.

(Candidates are at liberty, as per Syllabus of Examination, to write on such two of the three subjects given below as they may choose. No credit will be given to papers on all subjects from the same candidate.)

CHEMISTRY.

1. Describe a process for the preparation of oxygen, and state as fully as you can its chief properties.
2. Write a note on the distribution, preparation and properties of phosphorus.
3. Classify the following elements into metals and non-metals, giving the common name of each: Al, K, H, Pb, Cu, C, Hg, Br, Au, Na, Ca, O, Fe, Zn, P. Distinguish between sublimation and distillation.
4. Give the steps by which nitrous oxide may be obtained from hydric nitrate.
5. Mention some of the natural sources of silicon, and give some account of its principal compounds.
6. Describe the chief tests for Zinc, and name its most important salts.

NATURAL PHILOSOPHY.

1. Write the formulæ for falling bodies, explaining the symbols you employ, and by means of a diagram represent the path of a particle projected horizontally and allowed to fall under the action of its own weight.
2. Give the equations for determining the advantage gained by using an inclined plane. A screw whose threads are one quarter of an inch apart is turned by a lever 6 feet long. How great a force will be exerted by a power of 25 lbs., applied at the end of the lever, allowing 200 lbs. for friction?
3. State the law respecting the pressure of liquids, and name any familiar facts or describe any experiments illustrating your answer.
4. State clearly what is meant by Specific Gravity, and show how to find the sp. gr. of (a) a solid heavier than water, (b) a solid lighter than water, (c) a liquid, (d) a gas.
5. Explain "Angle of Reflection," "Angle of Refraction," "Critical Angle." The chief focal length of a lens is 12 inches; how far must I place a luminous object from the lens in order to obtain an image twice as large every way as the object?
6. State the laws of Reflection, and describe any experiment by which they may be illustrated.

FRENCH.

Translate into English:

DORIMENE.—Je ne sais pas, Dorante; je fais encore ici une étrange démarche, de me laisser amener par vous dans une maison où je ne connais personne.

DORANTE.—Quel lieu voulez-vous donc, madame, que mon amour choisisse pour vous réguler, puisque, pour fuir l'éclat, vous ne voulez ni votre maison, ni la mienne?

DORIMENE.—Mais vous ne dites pas que je m'engage insensiblement chaque jour à recevoir de trop grands témoignages de votre passion? J'ai beau me défendre des choses, vous fatiguez ma résistance, et vous avez une civile opiniâtreté qui me fait venir doucement à tout ce qu'il vous plaît. Les visites fréquentes ont commencé, les déclarations sont venues ensuite, qui, après elles, ont entraîné les sérénades et les cadeaux, que les présents ont suivis. Je me suis opposée à tout cela; mais vous ne vous rebutez point, et, pied à pied, vous gagnez mes résolutions. Pour moi, je ne puis plus répondre de rien; et je crois qu'à la fin vous me ferez venir au mariage, dont je me suis tant éloignée.

DORANTE.—Ma foi, madame, vous y devriez déjà être. Vous êtes veuve, et ne dépendez que de vous; je suis maître de moi, et vous aimez plus que ma vie: à quoi tient-il que, dès aujourd'hui, vous ne fassiez tout mon bonheur?

DORIMENE.—Mon Dieu, Dorante, il faut des deux parts bien des qualités pour vivre heureusement ensemble; et les deux plus raisonnables personnes du monde ont souvent peine à composer une union dont ils soient satisfaits.

DORANTE.—Vous vous moquez, madame, de vous y figurer tant de difficultés; et l'expérience que vous avez faite ne conclut rien pour tous les autres.

DORIMENE.—Enfin, j'en reviens toujours là. Les dépenses que je vais vous faire pour moi m'inquiètent par deux raisons; l'une, qu'elles m'engagent plus que je ne voudrais; et l'autre, que je suis sûre, sans vous déplaire, que vous ne les faites point que vous ne vous incommodiez; et je ne veux point cela.

DORANTE.—Ah! madame, ce sont des bagatelles, et ce n'est pas par là

DORIMENE.—Je sais ce que je dis; et, entre autres, le diamant que vous m'avez forcé à prendre est d'un prix...

DORANTE.—Hé! madame, de grâce, ne faites point tant valoir une chose que mon amour trouve indigne de vous; et souffrez... Voici le maître du logis.

1. What are the Primitive tenses of a French verb? Name the Derivative tenses, and state how they are formed.

2. Give the general rule for the position of the adjective in French. Write those adjectives which form an exception to the general rule.

3. Give the principal parts of the following verbs: *faire, vouloir, dire, venir, suivre, vivre*, and parse *que mon amour choisisse, ont commencé* and *sont venues*; account for the *es* in the latter.

4. Write the present and imperfect subjunctive of *recevoir, être, croire, voir* and *tenir*.

5. Translate into French:

Knock at the door. Many young men are hasty and giddy. It is very fine weather. If your sisters are at home bring them with you; we shall be delighted to see them. Cut some bread. Give me the loaf. Look at this boy, he looks well. If I had better paper and a better pen, I would write better. Take my horse to the stable. Return me my money. Good-bye, ladies. I wish you a pleasant walk. I shall spend the evening with you.

LATIN COMPOSITION.

(A lexicon may be used, but no other book.)

Translate into Latin:—

1. It seemed that there stood by him in his sleep an old man far advanced in years, with white hairs, and a kindly countenance, who bade him be of good cheer and hope for the best, for (that) he would reach in safety the island of Corcyra after a voyage of some days.

2. Then, for the sake of burial, he ordered the bodies of his own men to be brought together to one place. There is some authority for the statement that the Roman General also was searched out and buried.

3. The miser fears that he may lose some of his property, or that his estate may not be increased.

4. Concerning the prisoners there is another report: that the ten foremost came, and when a discussion had been held in the senate concerning them, as to whether or not they should be admitted into the city, they were admitted on this condition, that *the floor of the senate (senatus)* should not be given them.

5. It was certainly (*sane*) a wonderful speech; I could not imitate it if I would; perhaps I would not if I could.

GREEK COMPOSITION.

(A lexicon may be used, but no other book.)

Translate into Greek:—

1. He who is indolent for the sake of pleasure may very soon be deprived (*nor. opt. an*) of that charm of inactivity for the sake of which he is indolent.

2. It was difficult for another to anticipate him in doing this.

3. Those who are born of the same parents and brought up in the same house, those indeed are of all the most intimate.

4. Cyrus died fighting very bravely.

5. Thou canst not purchase virtue and nobleness of mind for money.

ROMAN HISTORY.

1. Discuss the probable elements of fact involved in the legendary accounts of the period of the kings.

2. Locate and give historical reference of the following:—Hercules, Saguntum, Trasimenus, Tarentum, Rubicon, Zama, Actium.

3. Relate briefly the contests between the Patricians and the Plebeians.

4. Describe the Manilian Law, and the proceedings carried on under it the following year.

5. Describe Caesar's Agrarian Law, and the circumstances under which it was passed.