

2. State the functions of the blood. Give also its physical qualities and chemical composition.
3. Describe the spinal cord.
4. Write a note on the structure and mode of growth of bones.
5. Describe the larynx.
6. Discuss the effects of the use of impure water as exemplified in some forms of disease.

(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. What are Verdigris, Blue Vitriol, White Lead, Saltpetre, Epsom Salts? Explain their composition.
2. Write a note on the chemical action of Light. What are Fraunhofer's lines?
3. Give the source, symbol and atomic weight of Aluminium. Mention its principal compounds, and state what advantages it possesses over Iron.
4. How is the element Sodium prepared? Give a short account of its most important compounds.
5. How does Phosphorus occur in nature? What are its properties and how is it prepared?
6. Mention and state the chief uses of the principal compounds of Ca found in nature. How is Hydrochloric acid prepared? Mention its chief properties. What are the general characters of the metals of the alkalies?

NATURAL PHILOSOPHY.

1. Explain the principle of the Screw, and state the condition of equilibrium when a weight is supported by a screw. A screw whose threads are $\frac{1}{4}$ of an inch apart is turned by a lever 6 ft. long. How great a force will be exerted by a power of 25 lbs., at the end of the lever, allowing 200 lbs. for friction?
2. Three particles are placed at the angles of a triangle whose weights are proportional to the opposite sides; show that their centre of gravity coincides with the centre of the inscribed circle.
3. Describe an experiment which proves that the upward pressure of a fluid on any substance immersed in it is equal to the weight of the fluid displaced by the substance. Give a sketch showing the arrangement of the apparatus.
4. Describe the method which you would employ to find the Specific Gravity of a liquid, and explain how to calculate the result. Find the specific gravity of a piece of ice from the following conditions: a lump of ice weighing 8 lbs. is tied to 16 lbs. of lead. In water the lead alone weighs 14.8 lbs., while the lead and ice in water weigh 13.712 lbs.
5. Discuss *real* and *virtual* foci.
6. Explain the formation of images with a plane mirror.

FRENCH.

Translate into English—

LE MAÎTRE DE MUSIQUE.—J'en demeure d'accord; et je les goûte comme vous. Il n'y a rien assurément qui chatouille que les applaudissements que vous dites; mais cet encens ne fait pas vivre. Des louanges toutes pures ne mettent point un homme à son aise il y faut mêler du solide; et la meilleure façon de louer, c'est de louer avec les mains. C'est un homme, à la vérité, dont les lumières sont petites, qui parle à tort et à travers de toutes choses, et n'approuve qu'à contre-sens mais son argent redresse les jugements de son esprit; il a du discernement dans sa bourse; ses louanges sont monnayées; et ce bourgeois ignorant nous vaut mieux, comme vous voyez, que le grand seigneur éclairé qui nous a introduits ici.

LE MAÎTRE A DANSE.—Il y a quelque chose de vrai dans ce que vous dites; mais je trouve que vous appuyez un peu trop sur l'argent; et l'intérêt est quelque chose de si bas, qu'il ne faut jamais qu'un honnête homme montre pour lui de l'attachement.

MADAME JOURDAIN.—C'est une chose, moi, où je ne consentirai point. Les alliances avec plus grand que soi sont sujettes toujours à de fâcheux inconvénients. Je ne veux point qu'un gendre puisse à ma fille reprocher ses parents, et qu'elle ait des enfants qui aient honte de m'appeler leur grand' maman. S'il fallait qu'elle me vint visiter en équipage de grand'dame, et qu'elle manquât, par mégarde, à saluer quelqu'un du quartier, on ne manquerait pas aussitôt de dire cent sottises. "Voyez-vous, dirait-on, cette madame la mar-

quise qui fait tant la glorieuse? C'est la fille de monsieur Jourdain qui était trop heureuse, d'ant petite, de jouer à la madame avec nous. Elle n'a pas toujours été si relevée que la voilà; et ses deux grands-pères vendaient du drap auprès de la porte Saint-Innocent. Ils ont amassé du bien à leurs enfants, qu'ils paient maintenant peut-être bien cher en l'autre monde; et l'on ne devient guère si riche à être honnêtes gens." Je ne veux point de tous ces caquets, et je veux un homme, en un mot, qui m'ait obligation de ma fille, et à qui je puisse dire: "Mettez-vous là, mon gendre, et dinez avec moi."

1. Parse *dites, mettent, il faut, vaut, puisse, vint*.

2. Give the general rule for the formation of the feminine of adjectives and write the feminine of *bon, ancien, nouveau, vieux, doux*, and the masculine of *heureuse, fausse, fraîche, folle, neuve*.

3. Account for the *s* in *introduits* in first extract.

4. Give sentences illustrating the uses of *en*, (1) as a pronoun, (2) a preposition, (3) an adverb.

5. Distinguish between *connaître*, and *savoir*, and give principal parts of each.

Translate into French.

I shall answer his letter to-morrow. The wolf is the most cruel of all animals. Let us go to dinner. Do not meddle with other people's business. You have time to do this for me. I have burnt my finger. It occurred in the year: one thousand eight hundred and sixty-nine. I am very thirsty. A traveller walked one hundred and eighty miles in nine days. He knows his lesson wonderfully well. Sit down, gentlemen, here are some chairs. He has been struck by a bullet. My two letters are written. This child behaves very well. I live near the railway. I cannot come because I am not well. This tree was struck by lightning. The rainbows were beautiful. The cover of the book is green.

LATIN COMPOSITION.

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

Translate into Latin:

1. He knew that Cæsar was coming. He begged Cæsar to come. He feared that Cæsar would not come, or would come too late.
2. If I had made the same mistake as you, I would have repented long ago.
3. We must take care to consult the interest of private men, but in such a way that our action may do good, or at least may not do harm, to the whole community.
4. The General ordered (*impero*) the soldiers to collect wood and remain awake all night.
5. If Caius has corn for sale, ask him at what price he will sell it.
6. I hear that Plato left Athens on the 6th of May and came to Tarentum in the consulship of Camillus and Claudius.

GREEK PROSE COMPOSITION.

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

Translate into Greek:

1. This happened, it being possible (use a participle), within five days to have gone to the Hellespont and to have saved Byzantium.
2. All the previous speakers (express by participle and adverb) seem to me to be praising men on account of blessings (gen. of cause) which are the gift of God.
3. It is not possible for one who acts unjustly and is perjured and false to obtain lasting power.
4. The Athenians resolved to ask the Lacedæmonians what they meant.
5. I have spoken not as I would but as I could.
6. He said he thought that wisdom was better than wealth.

ROMAN HISTORY.

1. Describe the physical geography of Italy, and state its advantages for the development of Roman power. Name the races inhabiting Italy at the earliest period of its history, and locate each geographically.
2. Write a full note on each of the following terms: *consul, dictator, tribune of the plebs, veto, assembling of the tribes, twelve tables, triumvirates*.
3. Describe the Gallic Invasion of Rome.
4. What was the cause, and what were the results, of the Social War?