4. A stone is dropped into a well, and after two seconds and a half a splash is heard: what is the depth of the well? Supposing the time to be from eight to ten seconds, would anything but the laws of falling bodies have to be considered to ascertain the depth?

5. Draw a diagram showing the mode of the formation of the image in a photographic camera.

6. What is the physical difference between noise and music? Upon what do the pitch and loudness of note depend?

7. How would you prove that water expands when it freezes? Describe the effects of this expansion in nature.

8. Describe various simple means of producing an electric current. Draw a diagram of, and give the formulæ of, the action of either Grove's or Daniell's cell.

9. Divide the following into two lists, one of elements and the other of compounds; if you know their affinities, place the elements in order, the most positive being at the top; and where you know the composition, place a statement of it opposite to the name of the compound:—Table salt, sulphur, kerosene, sugar, iron, silver, oxygen, flint, charcoal, glass, bone-ash, clay, phosphorus, copper, and zinc.

10. Show (with chemical equations, if you can) all the experiments that may be made with the following substances, and describe one experiment in detail:—

Hydrogen.	Oxygen.
Chlorine.	Water.
Phosphorus.	Sodium.

11. Make an enlarged sketch of a candle flame, and write on it all the chemical changes going on in its several parts; show also which are the reducing and the oxidising parts, and explain why they have this property.

12. Give an account of the manufacture and composition of glass, or soap, or porcelain, or cement.

13. Draw a diagram to illustrate, as completely as you can, the circulation of the blood.

14. Describe the structure and functions of either the root or leaf of a tree.

15. Give a general account of the mechanism of respiration.

16. Make a sketch of any common flower, writing on it the names of the several parts, and stating their uses.

Classes D and E.—Domestic Economy and Laws of Health.

Time allowed: Three hours.

[Note.—This paper is for female candidates who are proficient in Needlework, and, in consideration of this, are allowed, if they prefer it, to be examined in Domestic Economy and the Laws of Health, instead of in the general subject of Elementary Science. See the note on the Elementary Science paper.]

1. State what you know of the composition of the air. How is its composition altered by breathing it?

2. Foods are often divided into heat-givers and flesh-formers. Give examples, and state the general composition of each class.

3. What happens to a piece of bread as it passes from the mouth into the general circulation of the blood?

4. Draw a diagram of the heart, and show the course of the blood through it.

5. Describe the general structure of the skin, and state why soap is required in order to cleanse it.

6. Give some account of the effects upon the system produced by an excessive use of alcoholic drinks.

7. Describe the various ways of cooking potatoes, and give the advantages of each method.

8. What precautions would you take in order to prevent a contagious disease from spreading?

9. Explain the process of respiration, and state some of the effects produced by tight lacing.

10. Give an account of the processes of grilling and frying, and state the effects of each and their advantages.

Classes D and E.—School Management.

Time allowed: Three hours.

[Note.—Candidates may select one question from each of the first three sections, but not more than one. Sections IV., V., and VI. are compulsory, and candidates are advised to deal with these first, or to reserve at least half the time for them.]

Section I.

1. Supposing you were appointed to a newly-established school in a district where the majority of the children had not passed any standard examinations, explain fully the method by which you would classify your pupils.

2. Define clearly the respective duties of the headmaster and of the female assistant in a school in which they are the only teachers.

3. Describe the advantages and disadvantages connected with the employment of pupil-teachers.

Section II.

1. State what means you would adopt to eradicate the following faults:—Irregularity in attendance, want of punctuality, falsehood, insubordination. Give your reasons.

2. Show that "copying" is a result of bad teaching as well as of bad discipline, and describe the methods by which you would deal with the evil when you found it prevalent.

3. How can a teacher use the playground as a means to improve the tone of his school? What help in this would you expect from the elder pupils in the playground, and on the road to and from the school?