

NATURAL PHILOSOPHY.

Examiner.....H. ASPINWALL HOWE, M.A., LL.D.

1. Determine by a geometrical construction the resultant of three forces acting on a particle in given directions in the same plane.

2. Explain the meaning of. (a) uniform motion; (b) uniformly accelerated motion; (c) retarded motion; and state how such effects are produced. Why does not motion cease when the cause which produces motion ceases to act?

3. Give some illustrations of phenomena to which the forces of *chemical affinity, cohesion* and *adhesion* come respectively into play.

4. In what respect does a *liquid* differ from a *gas*? How may it be proved that a gas is effected by gravity.

5. If the S. G. of sea-water is 1.0623 and that of ice .9214, how much of the volume of a floating iceberg is below the surface of the water?

CHEMISTRY.

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1. What is understood by *standard temperature*, and *pressure* in the measurement of gases?

3. Give the formula for *water*, and explain how you would shew that this formula correctly represents the composition of water.

3. State the mode of preparation, the properties and uses of *chlorinated lime* or *bleaching powder*.

4. How would you detect *iodine* in *iodides*, and how may the element be obtained from an iodide?

5. Name *alkali metals*, and describe two important compounds of any one of them.

BOTANY.

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1. Describe the *germination* of a seed, such as that of maple.