

Particle physics

Cambridge International AS & A Level Physics

Unlike IGCSE, 9702 gives you a data sheet: it is page 2 of Papers 1, 2 and 4, with more formulae on page 3 of Paper 4. Everything marked GIVEN is printed for you; everything else you must recall. Compiled by GioPhysics from the published syllabus. This is an independent study aid, not a Cambridge document; the official syllabus is the authority.

11.1 Atoms, nuclei and radiation

AS

Nuclide notation

$${}^A_Z\text{X} \cdot A = Z + N$$

A — nucleon number

Z — proton number

N — number of neutrons

11.2 Fundamental particles

AS

Quark charges

$$\text{up, charm, top} = +\frac{2}{3}e \cdot \text{down, strange, bottom} = -\frac{1}{3}e$$

e — elementary charge (C)

antiquark — carries the opposite charge

A proton is uud and a neutron is udd.