

Baryon number (B)

baryons: (e.g. protons and neutrons)	+ 1
antibaryons: (e.g. antiproton)	- 1
non-baryons (e.g. mesons and leptons)	0

Conservation of baryon number

In all interactions the total baryon number is conserved.

You are expected to recall baryon numbers in the AS examination!

Lepton number (L)

leptons: (electrons, muons and their neutrinos)	+ 1
antileptons: (positrons, antimuons and their antineutrinos)	- 1
non-leptons (e.g. hadrons and photons)	0

Conservation of lepton number

In all interactions the total lepton number is conserved.

Lepton numbers are given in the AS examination

Properties of quarks

	symbol	relative mass	charge proton = 1	baryon number	strangeness
up	u	1	+ $\frac{2}{3}$	+ $\frac{1}{3}$	0
down	d	2	- $\frac{1}{3}$	+ $\frac{1}{3}$	0
strange	s	40	- $\frac{1}{3}$	+ $\frac{1}{3}$	- 1
charm	<i>c</i>	<i>600</i>	+ $\frac{2}{3}$	+ $\frac{1}{3}$	<i>0</i>
top	<i>t</i>	<i>90 000</i>	+ $\frac{2}{3}$	+ $\frac{1}{3}$	<i>0</i>
bottom	<i>b</i>	<i>2000</i>	- $\frac{1}{3}$	+ $\frac{1}{3}$	<i>0</i>

Antiquarks have the same mass but opposite charge, baryon number and strangeness.