Things to remember in the last hour before the exam: Level 3 Atoms Photons and Nuclei

(This is not a revision sheet – you've done that by now - it's a list of things you might want to memorise at the last minute…)

1. Most equations are only used once so highlight an equation once you have used it. Any constants you need e.g. h = 6.63 x 10^{-34} will be given to you (probably on the separate equation sheet).
2. You must convert quantities into **SI** before using them (e.g. 2 cm = 2 x 10^{-2} m, 2 cm^2 = 2 x 10^{-4} m^2) in an equation. Remember prefixes (n = 10^{-9}, μ=10^{-6}, m = 10^{-3}, c = 10^{-2}, k = 10^{3}, M = 10^{6}, G = 10^{9})
3. If you can't remember the units, use the units on the other side of the equation e.g. h = E/f so Planck's constant, h has units of J (from E) ÷ s^{-1} (from f) i.e. J s
4. If you are asked to give the answer to the correct number of significant figures use the information in the question (the least number of significant figures) and write your rounded answer after your calculated answer (and not instead of) – have a guess if you can't remember and it isn't the same rule as Chemistry
5. If it's "light" falling on a metal, it's the photoelectric effect.
6. In the photoelectric effect, **one** photon causes **one** electron to be released
7. In the photoelectric effect the current tells you how many electrons are emitted
8. $\mathbf{eV_s}$ is NOT electron-volts (it's 1.6 x 10^{-19} x stopping voltage)
9. The wavelength of white light is shifted to red if going away from you and blue coming towards (like a modern car with halogen lights)
10. Remember My Instructions Visible Under X-ray Glasses (is in order of increasing f and E)
11. Red 700 nm, Blue 400 nm
12. The Bohr and Rydberg models only really work for Hydrogen
13. The transition for hydrogen to n = 2 (Balmer) is visible light
14. The mass deficit is the mass between the "reactants" and "products" of a nuclear reaction – use a calculator to deal with the 7 sig figs
15. The energy released is the mass deficit multiplied by c^2
16. Binding energy is released when nucleons create a nucleus (conjoined twins aren't quite enough mass to make two separate individuals)
17. Binding energy per nucleon = binding energy/number of nucleons (doh!)