hubble law - galaxies redshifted proportional to distance. space itself expanding rather than galaxies receding [1 mark]

implies that in the past galaxies were all on top of each other - hot dense early universe. radiates as a blackbody [1 mark]

as universe expands and cools then hydrogen eventually recombines - temperatures less than 3000K or 300,000 years after big bang. electrons bound in atoms and temperature so low that photons can no longer eject them from the atoms [1 mark]

electrons and photons no longer interact so photons freely stream out, preserving blackbody shape but getting redshifted as spacetime expands - this is the cosmic microwave background. [1 mark]

at even earlier times universe is hotter and denser so get nucleosynthesis - neutrons and protons fuse to get helium (deuterium, tritium and a little lithium). no heavier elements as they need higher temperatures but universe getting cooler as it expands [1 mark]

observations of primordial abundances and cmb have no other convincing interpretation apart from a hot dense early universe.[1 mark]

we currently see evidence for an accelerating expansion rather than deceleration (cosmic microwave background fluctuations and supernovae). most of energy in universe is in form we don't understand [1 mark]

also see evidence for dark matter (rotation curves of galaxies, clusters, microwave background fluctuations). not normal matter (protons/neutrons or neutrinos). so most of matter in universe is in form we don't understand. [1 mark]

see matter rather than antimatter. but standard model for particles say as the universe cools then we produce equal numbers. so this is telling us about the behaviour of matter at very high energies. [1 mark]

inflation - horizon problem for microwave background and/or $\Omega_{total} = 1$ don't know why - perhaps something in phase transition in early universe [1 mark]