Question 1

a)+1 for valid attempt OR +3 for correct process/solution
b) +1 for getting w's correct, +2 for having scaling relationship OR +1 for stating that they decrease
c) +1 solving w = 1, +1 for energy density remaining constant
d) +1 for lambda/energy density relationship, +1 for correct solution

Question 2 -

a. +1 for isotropy + homogeneity
b. +1 for defining/describing a, adot, R0, k, e. +0 for any missing.
c. +2 for attempt, +5 for correct process/solution
d. +1 for a'' < 0 for each, +1 for acceleration rate will decrease
e. +1 for acceleration will increase

Question 3

a. +1 for nothing special about the universe
   +1 for does not describe local universe
   +1 for scales > 100 Mpc
   +1 for galaxy structures, near constant temp of CMB

b) +1 for any of the following: speed of light is universal, curvature is global, a depends only on time, not space

c) +1 define horizon distance - distance photon could travel since big bang
+1 for ds = 0
+1 for solving using domega = 0
d) +1 for derivation, +1 for stating distance is smaller in radiation than matter dominated