Question 2			
		Answer	**Marks**
(a)	**i)**	Moles = 13000/44.1 = 295	1
	ii)	Mass = 3 x 295 x 44.0 = 38900 g = 38.9 kg (accept 39 kg)	1
	iii)	Heat energy = 2220 x 295 = 655000 kJ = 655 MJ	1
	iv)	1 mol s^{-1} = 2220 kJ s^{-1} = 2220 kW, so 15 kW = 15/2220 mole s^{-1} =15x24000/2220 =162 cm^3 s^{-1}	1
	v)	Still 140 psi (or 9.52 atm)	1
(b)	**i)**	Sensible bonding diagram with all single covalent bonds Accept a bond angle anything between 90^o - 105.5^o	1 1
	ii)	Mass = 295 x 0.02 x 10^{-9} x 62.1 = 0.000000366 g = 0.000366 mg = 3.66 x 10^{-7} g (accept 3.7 or 4.0 x 10^{-7} g)	1
(c)		6000 m^3 CH_4 = 6000 x 10^3 dm^3 = 6000 x 10^3 / 24 moles, so we get 6000 x 10^3 / 24 moles CO_2 = (6000 x 10^3 / 24) X 44 g CO_2 per hour. So in 16 days we get (6000 x 10^3 / 24) X 44 x 24 x 16 = 4224 x 10^6 g = 4224 tonnes (accept 4200 tonnes)	1