Question	Marking guidance	Additional Comments/Guidelines	Mark
08.1	**M1** $\dfrac{[CO]^2\,[H_2]^4}{[C_2H_5OH]\,[H_2O]}$ **M2** $mol^4\,dm^{-12}$	**M2** allow for units that are consequential on **M1**	1 1

08.2	**M1**	clear attempt made to divide moles by volume to find concentrations	7.66 x 10^{-3} scores **M1,2,3**	1
			7.66 x 10^{-15} scores **M1,3**	
	M2	$$\frac{[\frac{0.110}{0.750}]^2\,[\frac{0.220}{0.750}]^4}{[\frac{0.075}{0.750}]\,[\frac{0.156}{0.750}]}$$		1
			M1 can use 0.750 or 750 (or 75, 7.5, 0.075, 0.0075, etc)	1
	M3	7.66 x 10^{-3}	**M2** $\dfrac{(0.147)^2\,(0.293)^4}{(0.100)\,(0.208)}$ or $\dfrac{(0.0215)\,(0.00740)}{(0.100)\,(0.208)}$	
			for **M2** volume used must be 0.750 or 750 (if use V at this stage, then must be one of these values of V used later on)	
			M3 ignore units	
			If moles are used in place of concentration	
			penalise **M1**, but **M2** and **M3** could score for ECF	
			M2 $\dfrac{(0.110)^2\,(0.220)^4}{(0.075)\,(0.156)}$ **M3** = 2.42 x 10^{-3}	
			Allow ECF if incorrect expression for K_c is used	

08.3	**M1**	yield would decrease	mark each point independently	1
	M2	equilibrium (position) moves left / shifts left / in direction of reverse reaction	**M2** need both parts; ignore favours reverse reaction for the first part	1
		to oppose increase in pressure / to reduce pressure	**M3** 2 moles/molecules (of gas) on left hand side v 6 moles/molecules (of gas) on right hand side	
	M3	fewer moles/molecules of gas on left hand side / fewer moles/molecules of gaseous reactants		1
	M4	no effect on K_c		1