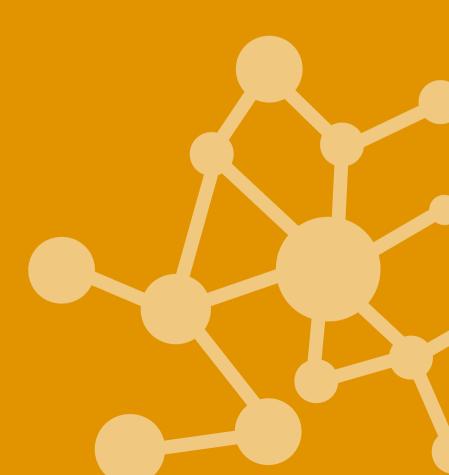
2nd **European Union Science Olympiad** in Groningen, Netherlands

TASK A ANSWER SHEET



Task A

Investigation of Hexokinase Activity – Answer sheet

1.	. Make the two graphs described above (chemoluminescence vs time and luminescences vs ATP conc) on the supplied graphing paper.	d chemo- 27 Marks
2.	. What is the function of the solution pH 12? Pick the 2 right answers. ☐ To stop the reaction ☐ Hydrolysis of ATP ☐ Inactivation of the enzyme ☐ To activate the luciferin ☐ To activate the hexokinase	3 Marks
3.	 . What is the most likely explanation for the method of inhibition of hex by 6-fluoro-6-deoxy-D-glucose? Pick the 2 right answers. □ The structural similarity between glucose and inhibitor. □ Inhibitor decreases the temperature of the reaction mixture. □ Inhibitor increases the temperature of the reaction mixture. □ The presence of the polar fluor atom. □ The inhibitor inhibits the oxidation of the luceferin. 	okinase 3 Marks
4.	. Use your standard ATP curve to measure the amount of ATP consuring each hexokinase catalysed reaction and hence the amount of gluco phosphorylated. Using this data, you can calculate the initial specific heactivity expressed as nmol ATP per minute consumed / mg hexokinase. 10 ⁻⁹ mol = 0.000000001 mol)	se that is exokinase
5.	. What else can you conclude from your results about the inhibition of he by the inhibitor 6-fluoro-6-deoxy-D-glucose and about the effect of enz centration on reaction speed? To answer this question, compare the 4 the results of your experiments.	yme con-

