Exam style questions, ages 14-16



Education in ChemistryNovember 2017
rsc.li/EiC617-catalysts-get-helping-hands

These exam-style questions accompany the above article 'Catalysis gets helping hands'.

2. Explain how a catalyst works (2 marks)

- 3. Draw fully labelled energy level diagrams for an exothermic reaction that is:
 - a. Uncatalysed (5 marks)
 - b. Catalysed (2 marks)

4. Give one example of a reaction that is commonly carried out in the presence of a catalyst. Include a balanced symbol equation for the reaction. (3 marks)

5. State 3 other factors that affect the rate of a reaction. (3 marks)

6. The reaction between peroxodisulfate ions and iodide ions is very slow. The reaction may be catalysed by Fe²⁺ ions. The reaction produces iodine. Iodine is a brown colour in water and can be further visualised with starch which produces a blue/black colour when a certain amount of iodine is produced.

$$S_2O_8^{2-} + 2I^- \rightarrow 2SO_4^{2-} + I_2$$

- a. Suggest why the reaction is very slow (1 mark)
- b. Outline an experiment which could be used to prove that Fe²⁺ ions catalyse the reaction (6 marks)