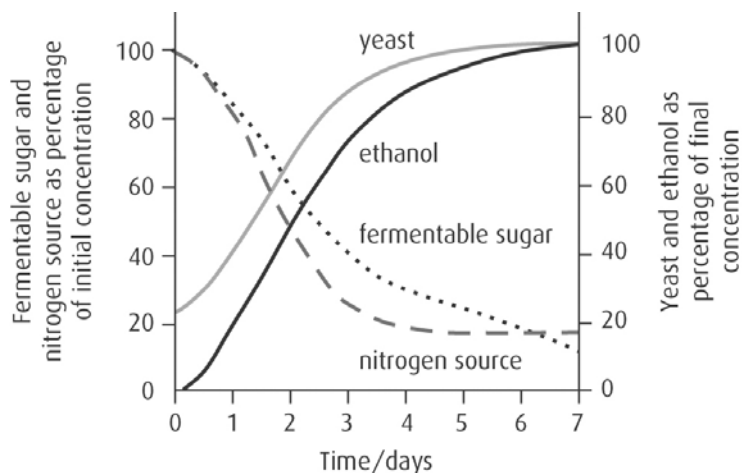


## Extension worksheet – Option F

- 1 The graph shows some of the changes in concentration during the industrial production of ethanol by yeast.

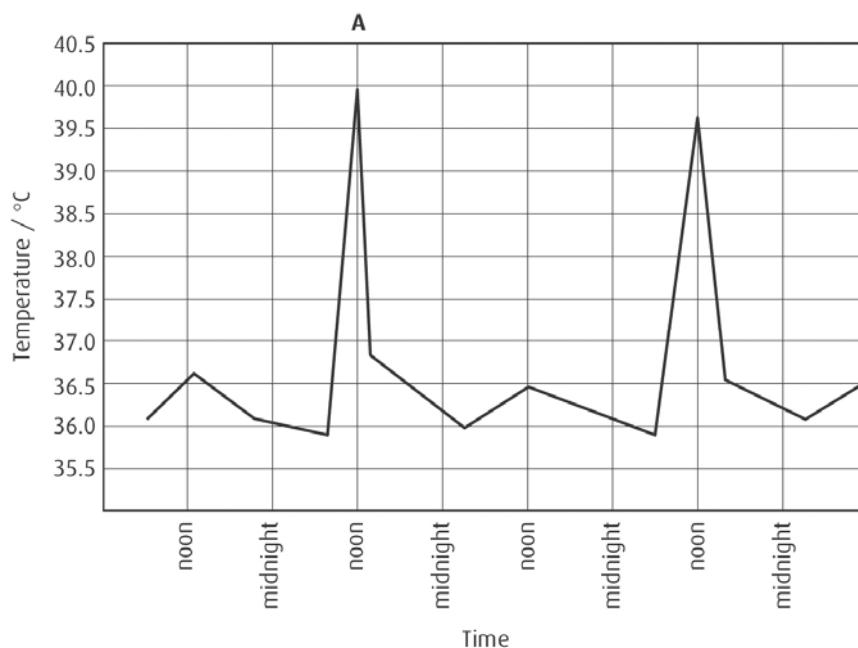


- a When does the population of yeast stop increasing? (1)
  - b Why does the population stop increasing? (1)
  - c Name the likely 'fermentable sugar' that has been used in this process? (1)
  - d If the process was producing beer, suggest the source of the sugar. (1)
  - e In this production process, the alcohol is collected from the fermentation vats after three days. Explain why this is the optimum time for collection. (3)
  - f This method of production is known as 'continuous fermentation'. It produces beer with a lower alcohol content than traditionally produced beer, which is fermented for longer and stored in barrels. Why does beer produced by continuous fermentation have a lower alcohol content? (1)
  - g Why might manufacturers prefer continuous fermentation? (1)
- 2 *Chlamydia*, which is one of the most common sexually transmitted infections in humans, is caused by an intracellular bacterium.
- a List **three** reasons why a person may not realise that they are infected with *Chlamydia*. (3)
  - b The disease can be treated with antibiotics.
    - i Define the term 'antibiotic'. (1)
    - ii Give **three** ways in which an antibiotic can kill bacteria. (3)
    - iii Why are antibiotics unable to kill viruses? (2)

- 3** Read the information in the paragraph below and answer the questions that follow.

Malaria is a life-threatening disease caused by parasites that are transmitted to people through the bites of infected mosquitoes. In 2008, malaria caused nearly one million deaths, mostly among African children. Malaria is preventable and curable. Malaria can decrease gross domestic product by as much as 1.3% in countries with high disease rates.

- a** What type of organism causes malaria? (1)
- b** How exactly does the mosquito transfer the parasite to people? (1)
- c** Why does malaria occur mainly in tropical regions? (1)
- d** Suggest **three** methods that can be used to prevent the disease. (3)
- e** The graph below shows the body temperature of a person who has malaria.



- i** Why does the person's temperature fluctuate in this way? (1)
  - ii** What is happening at the peaks on the graph, such as that indicated by point A? (1)
- f** Global warming is expected to lead to an increase in the number of areas where malaria infections occur. Suggest why this is so. (1)