

SECTION A (40 MARKS)

P53012

1.

Fig. 1 shows the results from an experiment in which the effect of different concentrations of substrate on the rate of an enzyme-catalysed reaction was investigated.

The experiment was then repeated using the same experimental conditions and substrate concentrations but in the presence of fixed amounts of compounds A and B (0.2 mM).

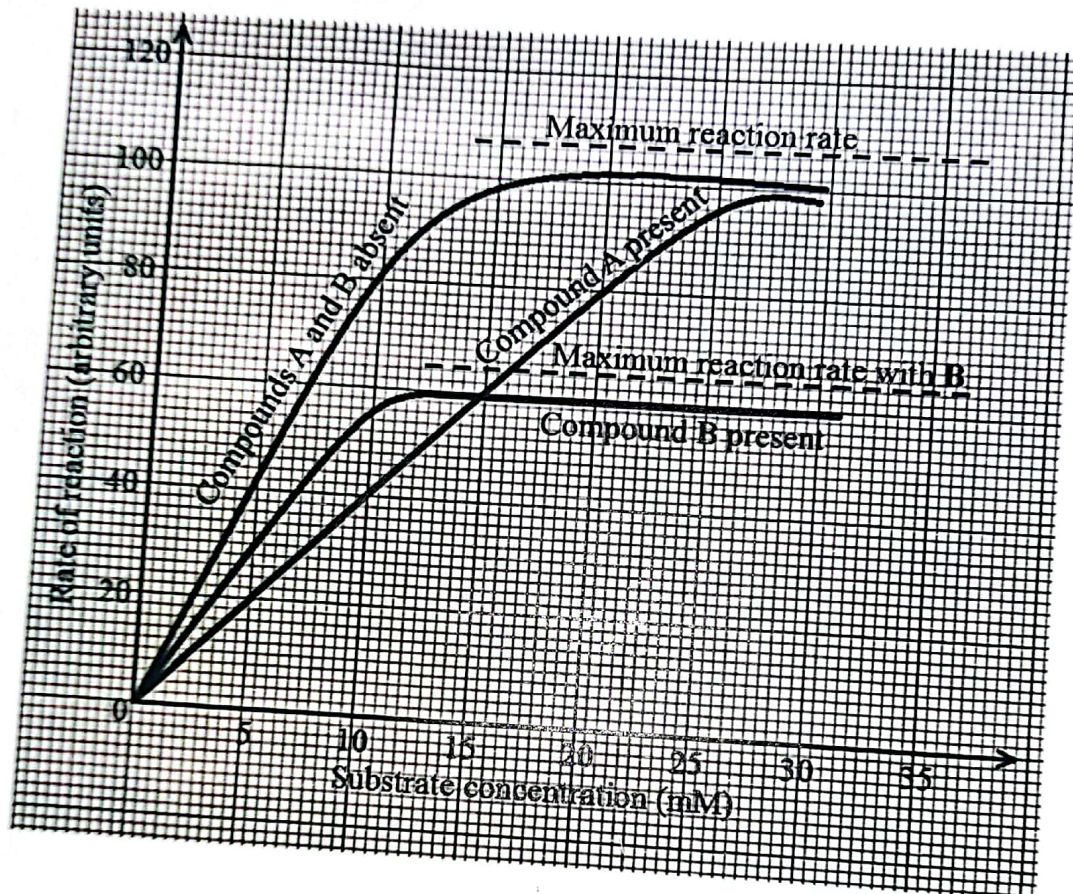


Fig. 1

- (a) Describe the relationship between the rate of reaction and substrate concentration when
 - (i) compounds A and B were absent. (04 marks)
 - (ii) compound A was present. (03 marks)
 - (iii) compound B was present. (03 marks)
- (b) Explain the experimental results in the
 - (i) absence of compounds A and B. (06 marks)
 - (ii) presence of compound A. (07 marks)

(iii) presence of compound B. (07 marks)

(c) Compare the rate of reaction in the presence of compounds A and B. (05 marks)

(d) What might be the effect of using 0.4 mM of compound A in the investigation? (02 marks)

(e) Suggest why compounds with similar properties to compounds A and B are often used to combat bacterial infections in the body. (03 marks)

SECTION B (60 MARKS)

Attempt only 3 questions

2.(a) Compare cardiac and skeletal muscle (06 marks)

(b) Discuss how each of the following is adapted to its function

(i) Cardiac muscles (07 marks)

(ii) Skeletal muscles (07 marks)

3(a) Describe the alternation of generation in a named Fern (10 marks)

(b) Discuss the importance of bacteria in the environment (10 marks)

4(a) Describe the glycolytic breakdown of glucose in the cytoplasm of the cell (10 marks)

(b) Explain what happens to end products of glycolysis in absence of oxygen (10 marks)

5(a) Explain the factors that affect the membrane fluidity (10 marks)

(b) Discuss the effect of the following on the rate of active transport

(i) increase in temperature (05 marks)

(ii) Addition of potassium cyanide (05 marks)

6(a) Describe how water moves from soil to the xylem (10 marks)

(b) Explain how the xylem is adapted for transport of materials (10 marks)

END.