

15.2 Control & Coordination in Plants

Question Paper

Course	CIEA Level Biology
Section	15. Control & Coordination
Topic	15.2 Control & Coordination in Plants
Difficulty	Medium

Time allowed: 40
Score: /31
Percentage: /100

Question 1a

Fig.1 shows the effect of increasing IAA concentration on the growth of plant roots and shoots.

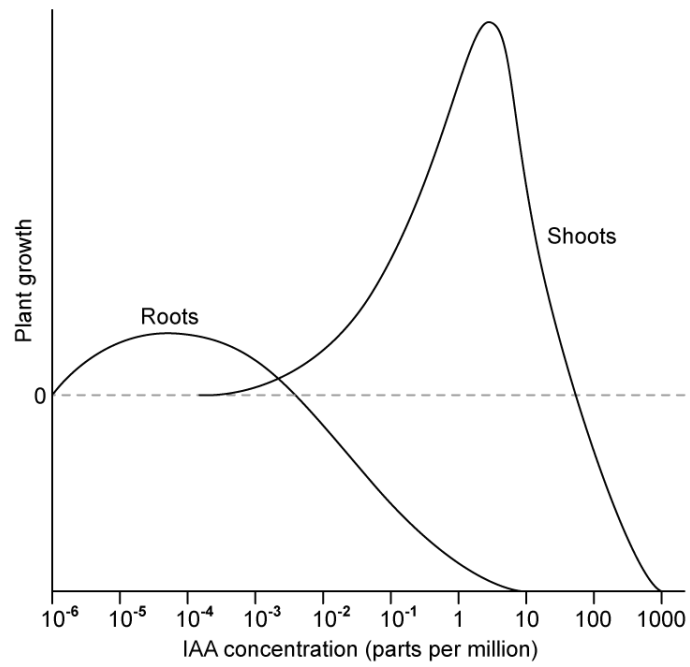


Fig. 1

Describe the effect of increasing IAA concentration on the growth of plant shoots shown in Fig.1.

[3 marks]

Question 1b

Explain the effect of IAA on shoot growth at a concentration of 1 part per million in Fig.1.

[5 marks]

Question 1c

Describe how the effect of IAA on plant roots differs from its effect on plant shoots as shown in Fig.1

[2 marks]

Question 2a

Fig.1 shows a drawing of a barley seed.

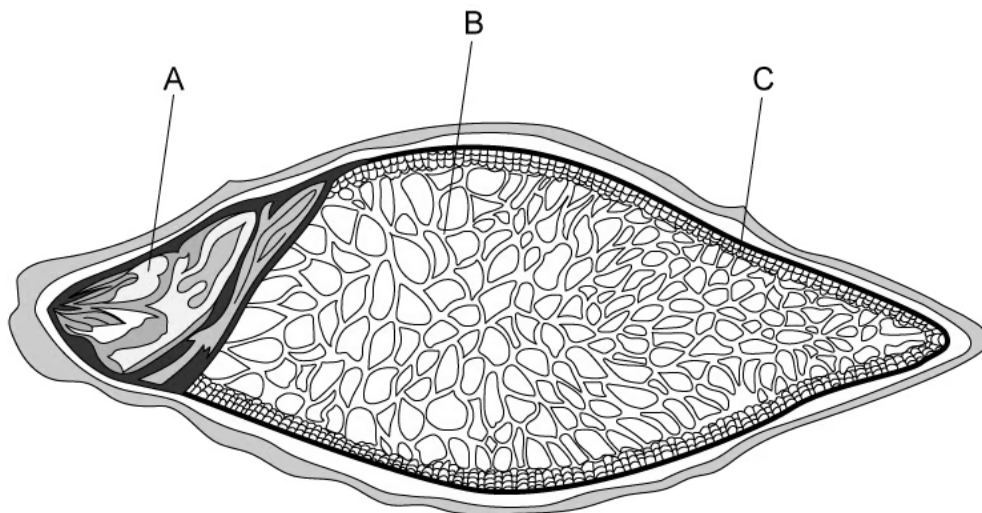


Fig. 1

Identify structures **A-C** in Fig.1.

[3 marks]

Question 2b

Fig. 2 shows the effect of increasing gibberellin concentration on the percentage of barley seeds that germinate. The smaller bars show standard deviations.

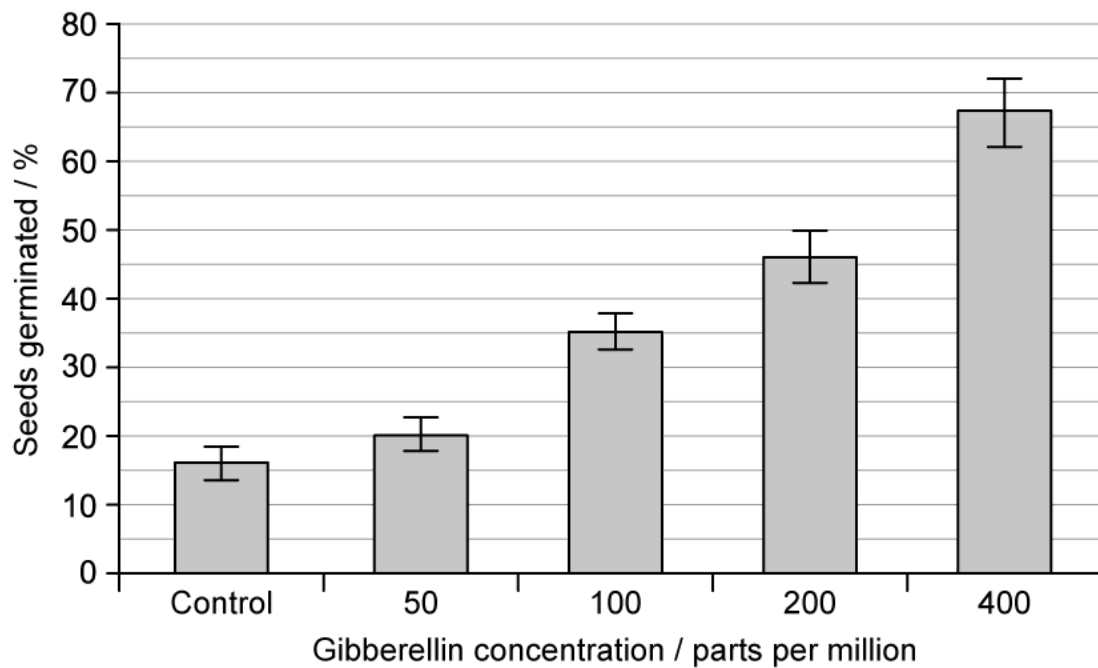


Fig. 2

Calculate the percentage increase in the seeds germinated at a gibberellin concentration of 100 parts per million in comparison to the seeds germinated at 50 parts per million.

[2 marks]

Question 2c

A student viewed Fig. 2 and concluded that adding gibberellin increases barley seed germination.

Using only information from Fig. 2, evaluate the student's conclusion.

[2 marks]

Question 2d

Explain the results shown in Fig. 2.

[5 marks]

Question 3a

Fig. 1 shows part of a cell in a growing region of a plant.

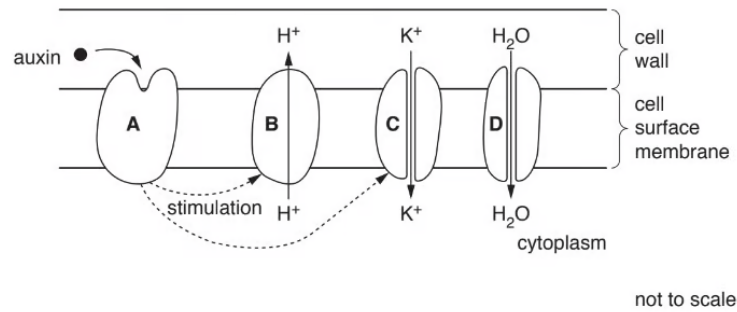


Fig. 1

(i)

State the **type** of protein represented by **A**.

[1]

(ii)

Proteins **B**, **C** and **D** are transport proteins.

Identify proteins **B**, **C** and **D**.

[3]

[4 marks]

Question 3b

Describe the effects on the cell wall of many hydrogen ions moving into the cell wall.

[3 marks]

Question 3c

Explain the consequences of an influx of potassium ions into the cell.

[2 marks]