

Year 12 induction homework

Instructions: write your answers on the sheet, show working out where appropriate.

1. Explain why a red precipitate forms in the biochemical test for reducing sugars (4)

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2. Calculate the average length of the palisade cell in this specimen. Give your answer in the most appropriate unit.



Magnification = x 400

Answer: unit

3. Explain why large multicellular organisms require transport systems, whereas small single cells organisms don't (4)

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4. A student investigated the effect of pH on the activity of the amylase.

This was the method used,

- Tubes containing starch and amylase were set up in a range of pH buffer solutions.
- The same concentration of starch and amylase were used each time.
- A small sample of the solution was removed and tested for the presence of starch at 20 s intervals.
- The procedure was repeated three times and a mean was calculated for each pH.

The student presented the results in **Table 2.1**.

pH	4	5	6	7	8	9
Mean amylase activity (% of maximum)	27	68	96	100	50	29

i. Another student wanted to replicate the investigation. Refine the method, by giving additional information, so that reproducible results would be obtained. (3)

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ii. Explain why amylase activity is low at pH 4. (4)

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iii. The student concluded that the optimum pH for amylase was pH 7.

A teacher made the following statement:

*'The results in **Table 2.1** provide only weak support for the conclusion that the optimum pH for amylase is pH 7.0'*

Evaluate the statement **and** suggest an improvement to the student's procedure that would support the conclusion more strongly. (3)

Evaluation

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Improvement

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