AQA, OCR, Edexcel

A Level

A Level Biology

General Practical Questions

Name:

M M E

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Total Marks:

Generic Questions for the A Level Practical's

Some of these questions may not be relevant to every one of the required practical's

1. What is the independent variable?
2. What is the range of the independent variable?
3. What is the interval of the independent variable?
4. How is the independent variable going to be changed?
5. What is the dependent variable?
6. How will the dependent variable be measured?
7. Identify the sorts of variables in the practical – continuous, categorical etc.
8. If measurement of the dependent variable required identifying an endpoint, how did you identify the endpoint accurately?
9. What is the level of precision that the apparatus measures to?
10. Are there different levels of precision that you need to work to e.g. do some measurements in the practical need to be more accurate than others?
11. Is there a particular order that you need to work in to ensure accuracy of results (e.g. for serial dilutions)?
12. In some practicals, it is advisable to set up a control experiment. Would a control experiment be required for the practical and how would it be set up?
13. What is the purpose of a control experiment?
14. What are the appropriate units for recording results?
15. Write a hypothesis and null hypothesis for the practical that includes the independent and dependent variable.
16. What are the alternative ways of measuring the dependent variable or alternative dependent variables that would still be investigating the hypothesis?
17. What are the control variables in the investigation?
18. What are the values for the control variables?
19. Preliminary work is often carried out to find out the most appropriate values for independent variables and control variables to make sure that you can measure the dependent variable in your lesson(s). Suggest how the preliminary work will have informed the practical that you carried out e.g. which values will have been decided by it?
20. What are the main risks in the practical and how would you minimize the risks (what are the control measures required to carry out the practical safely)?
21. Describe how the apparatus required for the practical was used accurately (particularly the apparatus identified in the specification – see below)
22. How did you decide how much data to collect – explain your answer – time limitations are not usually adequate to explain.
23. What information should be included in the results table?
24. What degree of accuracy is appropriate to record results / averages to?
25. What is the most appropriate way to present the results graphically?
26. What sorts of mathematical processing of data is appropriate to the practical?
27. Which stats test is the most appropriate to look for significance in the results obtained in the practical. Explain why this stats test is the most appropriate.

28. What were the main limitations of the practical that have affected the quality of results generated?
    Consider: the effect of variation within living tissue / organisms
    The accuracy of measurements taken
    How precisely control variables were controlled
    The impact of any other confounding variables
29. How did you try and overcome these limitations, or suggest ways of trying to overcome these limitations.
30. What further work could be carried out to investigate the hypothesis further e.g. finding an optimum temperature?