Practical questions from old ISAs.

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| 1. Investigation into the effect of a named variable on the rate of an enzyme-controlled reaction | a, b, c, f, l |
| BIO 3T P09 – effect of temp on rate of reaction controlled by trypsin  Bio 3T Q 12 – effect of substrate concentration  Bio 3T P 13 – effect of pH on amylase |  |
| 2. Preparation of stained squashes of cells from plant root tips; set-up and use of an optical microscope to identify the stages of mitosis in these stained squashes and calculation of a mitotic index | d, e, f |
| Human Bio 3T P 13 investigating the effect of time of day on mitosis |  |
| 3. Production of a dilution series of a solute to produce a calibration curve with which to identify the water potential of plant tissue | c, h, j, l |
| BIO 3T Q09 – finding the water potential of potato  BIO 3T P12 – effect of sucrose concentration on a stalk  BIO 3T P14 – blackcurrant squash potato osmosis |  |
| 4. Investigation into the effect of a named variable on the permeability of cell-surface membranes | a, b, c, j, l |
| BIO 3T Q10 – effect of alcohol concentration on leakage of pigment from beetroot membranes |  |
| 5. Dissection of animal or plant gas exchange or mass transport system or of organ within such a system | e, h, j |
| None |  |
| 6. Use of aseptic techniques to investigate the effect of antimicrobial substances on microbial growth | c, i |
| Human BIO 6T P12 effect of spices on bacterial growth |  |
| 7. Use of chromatography to investigate the pigments isolated from leaves of different plants eg leaves from shade-tolerant and shade- intolerant plants or leaves of different colours | b, c, g |
| Bio 6T P12 pigments in leaves |  |
| 8. Investigation into the effect of a named factor on the rate of dehydrogenase activity in extracts of chloroplasts | a, b, c |
| Bio 6T P11 ammonium hydroxide DCPIP |  |
| 9. Investigation into the effect of a named variable on the rate of respiration of cultures of single-celled organisms | a, b, c, i |
| Bio 6T Q11 effect of competition on growth of yeast  Bio 6T Q12 effect of temperature on respiration in yeast |  |
| 10. Investigation into the effect of an environmental variable on the movement of an animal using either a choice chamber or a maze | h |
| Bio 6T Q10 – effect of temp on rate of movement of invertebrate |  |
| 11. Production of a dilution series of a glucose solution and use of colorimetric techniques to produce a calibration curve with which to identify the concentration of glucose in an unknown ‘urine’ sample | b, c, f |
| BIO 3T Q14 – estimating concentration of glucose in a solution |  |
| 12. Investigation into the effect of a named environmental factor on the distribution of a given species | a, b, h, k, l |

None