Biology revision list- TRIPLE SCIENCE

1. What is meant by the term 'indicator species?
2. List the species that indicate pollution levels (clean/moderate/polluted).
3. What are the main methods of transport in cells?
4. State the definition for diffusion, active transport and osmosis.
5. Compare and contrast diffusion, active transport and osmosis.
6. Describe the factors which influence the rate of diffusion and relate this to Fick's law.
7. Where does respiration occur in cells?
8. State the word and symbol equation for aerobic respiration.
9. State the word and symbol equation for anaerobic respiration.
10. State what is transported by the xylem.
11. Describe the structural features/adaptations of the xylem vessels.
12. State what is transported by the phloem.
13. Describe the structural features/adaptations of the phloem.
14. Define the term transpiration.
15. Describe the factors that affect the rate of transpiration and explain why each would increase/decrease the rate.
16. Briefly outline the experiment you would undertake (using a potometer) to investigate the rate of transpiration in a plant.
17. Be able to calculate the rate of water uptake = volume of water taken up/time taken
18. Describe the structure of an artery, vein and capillary.
19. Compare and contrast the structure of the aforementioned blood vessels.
20. Revisit percentage calculations.
21. State the relationship between exercise and respiration rate.
22. Why do muscle cells require increased levels of glucose and oxygen during exercise?
23. How is an increased quantity of glucose and oxygen supplied?
24. How do you calculate mean, mode and median?
25. What is meant by the term 'anomalous result'.
26. Be able to construct a food chain and pyramid of biomass, given relevant data.
27. State the equation for percentage efficiency of energy transfer.
28. Explain why food chains are limited to only a few trophic levels. Refer to energy transfer and biomass in your answer.
29. Convert between the units below:
30. Define mutualism.
31. Define parasitism.
32. Define biodiversity.
33. Describe what is meant by the term indigenous.
34. Outline the stages in the nitrogen cycle and explain the role of nitrogen-fixing bacteria, nitrifying bacteria and denitrifying bacteria.
35. How do the levels of nitrates in the soil affect plant growth?
36. Outline how a farmer may increase the nitrate levels of the soil for improved crop growth.
37. Outline the main hormonal and non-hormonal forms of contraception and explain the advantages and disadvantages of each.
38. Which two hormones are involved in the regulation of blood glucose concentration?
39. Describe the events which occur when blood glucose is:
    a) Too high
    b) Too low

40. Which condition(s) occurs when a person cannot adequately regulate their blood glucose concentration.
41. State the differences between the causes, effects and treatments for type I and type II diabetes.
42. State f production of the hormones below and explain what effects they have on the body:
    a) Adrenaline
    b) Thyroxine
43. Outline the negative feedback loop for thyroxine.
44. State what is meant by the term decomposition.
45. Outline the factors which affect the rate of decomposition.
46. Be able to calculate the rate of decay.
47. What is meant by the terms phototropism and gravitropism.
48. Explain how phototropism and gravitropism responses occur in the roots and shoots (refer to auxins in your answer).
49. Describe which plant hormones are used commercially and explain why they are used.
50. State the equation linking HR, CO and SV.
51. Be able to calculate population size using the following equation:
    population size =(number marked in the first sample x size of the second sample)/number recaptured in the second sample.
52. What is eutrophication? Outline the steps in this process.
53. Describe the methods which could be used to conserve species.
54. Outline the food tests for: carbohydrates, lipids, fats and proteins (to include reagents and a brief method).
55. How is urea formed, transported and excreted from the body? Why is this important?