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AS Miscellaneous Test 1

1) Describe the process of phagocytosis? (3)

2) How does the structure of the cell surface membrane relate to its functions? (5)

3) Describe the differences between; (9)

    a. Glycogen and cellulose

    b. Haemoglobin and collagen

    c. Triglycerides and phospholipids

4) What is the biochemical test for; (3)

    a. Non-reducing sugars

    b. Proteins

    c. Lipids

5) Describe semi-conservative DNA replication? (4)

6) Explain how non-competitive inhibitors work? (4)

7) What are the biological properties of water? (8)

8) Describe the roles of (8);

    a. Monoclonal antibodies

    b. T-helper cells

    c. Cytotoxic T cells

    d. Memory cells

9) How do the following processes take place;

    a. Transcription (4)

    b. Translation (4)

10) Why is the genetic code degenerate and universal? (3)

11) What are the three causes of variation resulting from meiosis? (3)

12) Describe the process of;

    a. Mitosis (4)

    b. Meiosis (6)

13) Explain the different types of mutations and why some mutations are more dangerous? (5)

14) Describe gas exchange in a;

    a. Human (3)

    b. Fish (3)

    c. Amoeba (2)

    d. Plants (3)

15) Discuss the transport of the following substances in plants;

    a. Water (4)

    b. Sugars/Solutes (4)

16) Explain the shape of the oxyhaemoglobin dissociation curve? (4)

17) Explain how and why the oxyhaemoglobin curve is different;

    a. For foetal haemoglobin? (3)

    b. At high altitudes? (2)

    c. With too much carbon dioxide? (3)

18) How is carbon dioxide transported in the blood? (3)

19) Explain the differences between;

    a. Facilitated diffusion and active transport? (3)

    b. Prokaryotes and eukaryotes? (4)

    c. Scanning and transmission electron microscopes? (3)

20) Explain the following;

    a. Active versus passive immunity? (2)

    b. Artificial versus natural immunity? (2)

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21) Explain the role of the B and T lymphocytes in the specific immune response? (4)

22) What are humoral and cell mediated immunity? (3)

23) Why is the secondary immune response better than the primary? (2)

24) What are the benefits of vaccination and how does it work? (4)

25) Describe the structure of HIV and how it causes AIDS? (4)

26) What is the pathology in TB? (3)

27) Describe the structure of an antibody molecule and draw a simple labelled diagram? (4)

28) Explain how the heart beats and how the cardiac cycle works? (4)

29) What are the differences between arteries, veins and capillaries? (6)

30) Explain how tissue fluid is formed and drained? (5)

31) How are the following substances transported across the membrane and why? (8)

    a. Water

    b. Oestrogen

    c. Fatty acids

    d. Carbon dioxide

    e. Sodium ions

    f. Glucose

    g. Amino acids

    h. Proteins

Total: **/171**