1. a) Define 'true acidity' and 'titrable acidity'. Explain with proper examples. [1+1]

    b) Explain the importance of hydrophobic interactions in biological system. [3]

2. a) What are the merits of Five Kingdom classification of living organisms? [1·5]

    b) Explain Carl Woese's concept of Domain to classify organism. [2·5]

    c) What are the importances of type culture collection centre in microbiology? Write a note on the international code of Biological Nomenclature. [1·5+1·5]

3. a) Write down the chemical structure of peptidoglycan subunit. [3]

    b) Write down the important differences between intrinsic and extrinsic proteins. [3]

    c) Name one Gram positive coccus bacterium. [1]

4. a) Write down the structures of the following :

    i)   3' endo, syn- Adenosine monophosphate [3]

    ii) dG: dC base pairing [3]

    b) What do you mean by negatively supercoiled DNA? [2]

5. a) Why is agar more suitable as a solidifying agent than gelatine? [2]

    b) What is meant by "variolation"? [2]

    c) What is "new yeast" observed by Louis Pasteur in spoiled alcohol? [1]

6. a) Name two Nobel Laureates who were credited with for their inventions in the field of protein structure determination. What were their inventions? [2]

    b) State three important characteristics of peptide bond. [3]

7. a) Mention the difference between primary and secondary data. [2]

    b) What do you mean by central tendency? [2]

    c) What is a pie chart? [1]

8. a) What are the symmetry elements present in benzene? [2]

    b) Give an example of nonchiral molecule with stereogenic centre. [1]

    c) What are the drawbacks present in D/L nomenclature? [2]

    d) Differentiate between monomer, enantiomer and diastereomer with examples. [2]

    e) How many stereoisomers are present in aldaric acid with four carbon chain? [1]

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