

1. Vitamins are important nutritional food components. Please give an account of TWO vitamins under the following headings: (16 %)
 - (a) Structure
 - (b) Dietary sources
 - (c) Metabolic role
 - (d) Stability to food processing
2. Please describe your understanding by the term flavor? Compare the properties of compounds contributing to the sensations of taste and aroma in foods. (14 %)
3. Please answer parts (a) and (b): (total 20 %, 10 % for each)
 - (a) List four forces or interactions that are involved in stabilising the three-dimensional conformations of proteins. Specify which kind of amino acid is involved in each type of interaction.
 - (b) With reference to your answer to part (a), discuss possible mechanisms by which a protein can be denatured.
4. Please describe the structure and properties of carotenoids and anthocyanidins, including a discussion of the stability of these pigments during the storage and processing of food products. (20 %)
5. Please describe the chemical structures and properties of the major components of starch. (14 %)
6. Please discuss the mechanisms by which polyphenol oxidase can produce browning in fresh fruits, and discuss the ways in which these browning reactions can be inhibited. (16 %)