PRE-BOARD - II ASSIGNMENT

CHEMISTRY IN EVERYDAY LIFE

1. Why do we need to classify drugs in different ways ?
2. Explain the term, target molecules or drug targets as used in medicinal chemistry.
3. Name the macromolecules that are chosen as drug targets.
4. Why should not medicines be taken without consulting doctors ?
5. Define the term chemotherapy.
6 Which forces are involved in holding the drugs to the active site of enzymes ?
7. While antacids and antiallergic drugs interfere with the function of histamines, why
   do these not interfere with the function of each other?
8. Low level of noradrenaline is the cause of depression. What type of drugs are needed to cure this problem? Name two drugs.
9. What is meant by the term 'broad spectrum antibiotics'? Explain.
10. How do antiseptics differ from disinfectants ? Give one example of each.
11. Why are cimetidine and ranitidine better antacids than sodium hydrogen carbonate or magnesium or aluminium hydroxide ?
12. Name a substance which can be used as an antiseptic as well as disinfectant.
13. What are the main constituents of dettol ?
14 . What is tincture of iodine ? What is its use ?
15. What are food preservatives ?
16. Why is use of aspartathe limited to cold foods and drinks ?
17. What are artificial sweetening agents ? Give two examples.
18. Name the sweetening agent used in the preparation of sweets for a diabetic patient.
19. What problem arises in using alitame as artificial sweetener ?
20. How are synthetic detergents better than soaps ?
21. Explain the following terms with suitable examples
    i) cationic detergents
    ii) anionic detergents and
    iii) non-ionic detergents.
22. What are biodegradable and non-biodegradable detergents ? Give one example of each.
23. Why do soaps not work in hard water ?
24. Can you use soaps and synthetic detergents to check the hardness of water ?
25. Explain the cleansing action of soaps.

POLYMER

1. Explain the terms polymer and monomer.
2. What are natural and synthetic polymers? Give two examples of each type.
3. Distinguish between the terms homopolymer and copolymer and give an example of each.
4. How do you explain the functionality of a monomer?
5. Define the term polymerisation.
6. Is (NH-CHR-CO)n, a homopolymer or copolymer?
7. In which classes, the polymers are classified on the basis of molecular forces?
8. How can you differentiate between addition and condensation polymerisation?
9. Explain the term copolymerisation and give two examples.
10. Write the free radical mechanism for the polymerisation of ethene.
11. Define thermoplastics and thermosetting polymers with two examples of each.
12. Write the monomers used for getting the following polymers.
    (i) Polyvinyl chloride (ii) Teflon (iii) Bakelite
13. Write the name and structure of one of the common initiators used in free radical addition polymerisation.

14. How does the presence of double bonds in rubber molecules Influence their structure and reactivity?
15. Discuss the main purpose of vulcanisation of rubber.
16. What are the monomeric repeating units of Nylon-6 and Nylon-6,6?
17. Write the names and structures of the monomers of the following polymers:
(i) Buna-S (ii) Buna-N (iii) Dacron (iv) Neoprene

BIOMOLECULES

1. What are monosaccharides?
2. What are reducing sugars?
3. Write two main functions of carbohydrates in plants.
4. Classify the following into monosaccharides and disaccharides.
Ribose, 2 - deoxyribose, maltose, galactose, fructose and lactose.
5. What do you understand by the term glycosidic linkage? 14.
6. What is glycogen? How is it different from starch?
7. What are the hydrolysis products of (i) sucrose and (ii) lactose?
8. What is the basic structural difference between starch and cellulose?
9. What happens when D-glucose is treated with the following reagents?
(i) HI (ii) Bromine water (iii) HNO3
10. Enumerate the reactions of D-glucose which cannot be explained by its open chain structure.
11. What are essential and non-essential amino acids? Give two examples of each type.
12. Define the following as related to proteins
(i) Peptide linkage (ii) Primary structure (iii) Denaturation.
13. What are the common types of secondary structure of proteins?
14. What type of bonding helps in stabilising the a-helix structure of proteins?
15. Differentiate between globular and fibrous proteins.
16. How do you explain the amphoteric behaviour of amino acids?
17. What are enzymes?
18. What is the effect of denaturation on the structure of proteins?
19. How are vitamins classified? Name the vitamin responsible for the coagulation of blood.