QB365

Important Questions - Polymers

12th Standard CBSE

Chemistry Reg.No. : | | | | | | |

Time : 01:00:00 Hrs

Total Marks : 50

Section - A

1) Vulcanisation makes ruber..... 1

(a) more elastic (b) soluble in inorganic solvent (c) crystalline (d) more stiff

2) Of the following which one is classified as polyester polymer? 1

(a) Nylon-6,6 (b) Terylene (c) Bakelite (d) Melamine

3) Biodegradable polymer which can be produced from glycine and aminocaproic acid is 1

(a) buna-N (b) nylon 6,6 (c) nylon-2-nylon-6 (d) PHBV

4) Out of chain growth polymerisation and step growth polymerisation,in which type will you place the following. 1

$$-(A)_m + -(A)_n \longrightarrow -(A)_m-(A)_n$$

or $-(A—A)_{m+n}$

5) ..... is used for making magnetic recording tapes. 1

6) .....is used in the manufacture of paints and lacquers. 1

7) Acrilan	(1) polyacrylonitrile	1
8) Nylon 6	(2) Tyre,cords	1
9) PVC	(3) Free radical polymerisation	1
10) Ropes and fibres	(4) Nylon	1

Section - B

11) Differentiate between molecular structure and behaviours of thermoplastic and thermosetting polymers. Give one example of each type. 2

12) Differentiate the following pairs of polymers based on the property mentioned against each. (i)Novolac and bakelite (structure) (ii)Buna-S and terylene (intermolecular forces of attraction). 2

13) Discuss the main purpose of vulcanization of rubber. 2

14) Differentiate between a homopolymer and a copolymer.Give one example of each type. 2

15) How does vulcanization change the character of natural rubber. 2

16) Draw the structure of the monomer for each of the following polymers: 2

(i) Nylon-6

(ii) Polypropene

17) Why should the monomers used in addition polymerisation through free radical pathway be very pure ? **2**

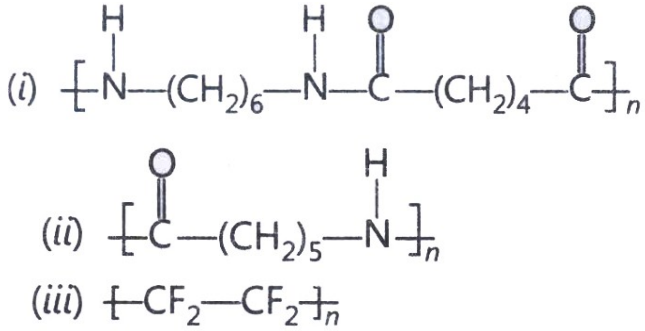
18) Write the names and structures of the monomers of the following polymers: **2**

(i) Buna-S

(ii) Dacron

(iii) Neoprene

19) Write the names of monomers of the following polymers : **2**



20) Why should one always use purest monomer' in free radical polymerisation ? **2**

Section - C

21) What is nylon?Write an equation for the chemistry involved contain alternate monomers of each type.What is the weight percent of ethylene in this copolymer. **5**

22) Study the given passage carefully and answer the questions that follow: **5**

Shalini studied a chapter on Polymers in school and came across the following paragraph: The durability, strength, low cost, water and chemicals resistance, welding properties, lesser'. energy, fewer atmosphere emissions and light weight are advantages of plastic bags. Shalini is confused as she has been reading in the newspaper about the ban on the usage of plastic substances. She further finds that despite the durability, the use of these materials has presented mankind with serious waste disposal problem as these materials do not disintegrate by themselves. In view of this, certain polymers are being developed which are broken down rapidly by micro-organisms. Shalini feels relaxed that such kinds of biomaterials are being developed.

(i) Name the class of these useful polymers which do not harm the environment.

(ii) Give anyone example of these polymers and name its monomers.

(iii) Comment on the qualities of Shalini.

23) Polymers are giant molecules having very high molecular masses. Several of them occur in nature and find a variety of applications in our daily life and industry. Cellulose, starch, proteins, rubber etc. are some examples of natural polymers. Now answer the following questions: **5**

(i)Does use of natural polymer cause pollution problems?

(ii) Name an inorganic natural polymer which is quite abundant in nature.

(iii) Name three polymers which are used in textile industry.

(iv) In what form is natural rubber usually used in rubber industry?

24) Formaldehyde is a constituent of a number of polymers also called resins. These are non-volatile solids or semi-solids which are obtained from certain plants and also be synthesized in the laboratory.

(i) Name the main formaldehyde resins.

(ii) Mention the major components of these resins also called polymers.

(iii) Which out of these is useful in the manufacture of crockery?

(iv) Formaldehyde is obtained from plants. Similarly we obtain many useful things from plants. Is it worth to destroy plants for obtaining useful material ?

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