POLYMERS

CHAPTER-15

TEST-A

SOLVED

Time:1 hr. **Max. Marks: 30**

SECTION-A

Tick the correct option:

1. Which of the following is an example of natural polyamide? **[1]**

   (i) Rubber (ii) Starch (iii) Proteins (iv) Nucleic acids

2. Identify the correct combination **[1]**

   (i) Teflon $\rightarrow$ Thermosetting polymer

   (ii) Novolac $\rightarrow$ Thermpolastic polymer

   (iii) Nylon-66 $\rightarrow$ Addition copolymer

   (iv) Nylon-6 $\rightarrow$ Biodegradable polymer

3. The polymer derived by condensation copolymerisation of benzene-1, 2-dicarboxylic acid and ethane-1, 2-diol is **[1]**

   (i) Glyptal (ii) ORLON (iii) Nylon-66 (iv) Dacron

Assertion-Reason type Questions:

(i) If assertion and reason both are correct and reason is the correct explanation of assertion.

(ii) If assertion and reason both are correct and reason is not the correct explanation of assertion.

(iii) If assertion is correct and reason is wrong.

(iv) If assertion is wrong and reason is correct.

4. Assertion: Natural rubber is cis 1, 4-polyisoprene. **[1]**

   Reason: Cis polyisoprene is not a straight chain but has a coiled structure and can be stretched like a spring.

5. Assertion: Novolac on heating with formaldehyde undergoes cross-linking to an infusible solid called bakelite. **[1]**

   Reason: Bakelite is a polymer which cannot be remoulded once set into a desired shape.

One word/One Sentence type Questions.

6. Arrange the following polymers in increasing order of their intermolecular forces: **[1]**

   Buna-S, Nylon-66, Bakelite, Polyethylene

7. Write the name and structure of the monomer of natural rubber. **[1]**

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SECTION-B

8. What does PTFE stands for? Give its method of preparation. Is this an addition homopolymer or condensation homopolymer? **[2]**

9. Name the monomers of Dacron. How is it prepared? **[2]**

10. (i) Name two examples of free radical initiators. **[2]**

    (ii) Define vulcanization of rubber.

11. (i) Write the names and structure of the monomers of Novalac. Give its use. **[3]**

    (ii) Define the term homopolymer and copolymer and give one example of each.

12. Explain the difference between Buna-N and Buna-S. Give the preparation of Buna-S **[3]**

    Mention its one use.

13. (i) Explain the mechanism of the radical polymerization of ethene. **[3]**

    (ii) How does the presence of double bond in rubber molecules influence their structure and reactivity?

14. (i) What do the number 6 and 66 stands for in the following polymers? **[3]**

    Nylon-6 and Nylon-66

    (ii) Give the preparation of Nylon-66

    (iii) Write two properties and two uses of Nylon-66.

15. (i) Identify the biodegradable polymer which is used in capsule shells and orthopaedic devices.

    (ii) Write its full form.

    (iii) Give the structures of the monomers from which it is formed?

    (iv) Show the formation of polymer.

    (v) Is this a condensation copolymer or addition copolymer? **[1×5]**

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