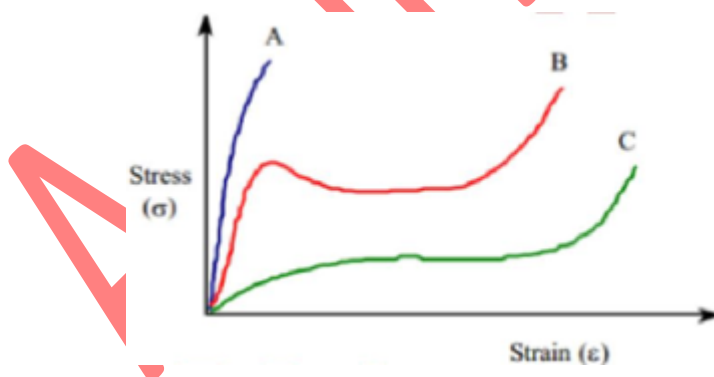


## Sample Questions

### Polymer Technology

1. Which of the following polymers is/are used in artificial eye parts, signal light lenses and television screens?
  - a. Buna-S
  - b. Poly (methyl methacrylate)
  - c. Polytetrafluoroethylene
  - d. Polyurethane
  - e. All of the above
2. Which of the following types of polymers can poly acrylonitrile be classified as?
  - a. Condensation polymer
  - b. Addition polymer
  - c. Natural polymer
  - d. None of the above
3. What does the area under the stress vs. strain curve quantify?



- a. The compliance of the material with the specifications
- b. The energy to elastically change the shape of the material
- c. The impact strength of the material
- d. Toughness of the material

4. A sample of atactic polystyrene, separated into 4 fractions is shown in the table. What is the average molecular weight?

Fraction	Number of moles	Molecular Weight
1	25	50,000
2	25	50,000
3	25	30,000
4	25	70,000

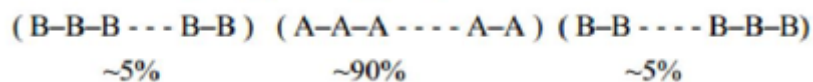
- a. 40,000  
b. 50,000  
c. 60,000  
d. 70,000

5. Which of the following is/are NOT a suitable oxidizing agent for oxidative doping of polyacetylene?

- a. Iodine vapor  
b. Acidified potassium dichromate  
c. Iodine in carbon tetrachloride  
d. Sodium naphthalide in THF

- a. Only i  
b. Only iii  
c. i and iii  
d. i, ii and iv  
e. i, ii, iii, iv

6. Consider the shown figure

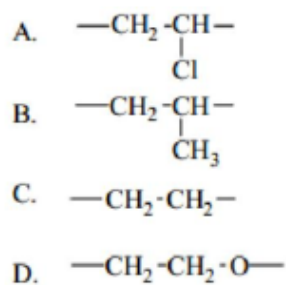


If A = butadiene and B = styrene, how would this polymer be synthesized?

- a. By anionic polymerization  
b. By using a Ziegler Natta catalyst  
c. By condensation polymerization  
d. By coordination polymerization

7. A partially miscible blend of two polymers will have \_\_\_\_\_.
- a single  $T_g$
  - two  $T_g$  values closer to  $T_g$  values of original polymers
  - a single  $T_g$  value that lies in between  $T_g$  values of original polymers
  - no  $T_g$

8. Which of the following polymers will have the highest  $T_g$  value?



- A
  - B
  - C
  - D
9. Which of the following techniques is commonly used to make lotion bottles?
- Stretch blow molding
  - Injection blow molding
  - Extrusion blow molding
  - Spin trimming molding

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