


لدي جواب

 1989	TANTA UNIVERSITY FACULTY OF SCIENCE CHEMISTRY DEPARTMENT		
	FINAL EXAM FOR SENIOR STUDENTS (CHEM/BIO, CHEM/ZOO, CHEM/ENT)		
	COURSE TITLE:	PHYSICAL CHEMISTRY OF POLYMERS (CH4252)	TIME ALLOWED:
DATE: MAY 25, 2015	TERM: SECOND	TOTAL ASSESSMENT MARKS: 50	2 HOURS

**Question 1: Answer the following:** (25 Marks)

- Explain the effect of steric hindrance and crosslinking density on chain flexibility of polymers. (give examples) (8 Marks)
- Describe the effect of strain rate and molecular weight of polymers on mechanical properties. (8 Marks)
- Explain the methods for determination the swellability of crosslinked polymers. (5 Marks)
- Describe the effect of chain flexibility on the polymer crystallinity. (4 Marks)

**Question 2: Compare between each pair of the followings: (Structure + Reason + Behavior)** (15 Marks)

- Polyethylene and cellulose (in glass transition temperature).
- Polystyrene and styrene-butadiene copolymer (in modulus).
- Syndiotactic and atactic polybutadiene (in crystallinity).
- Nylon-6,6 and Nylon 7,7 (in melting temperature)
- Polyacrylonitrile at ambient temperature and at high temperature (in rigidity).

**Question 3: Write short notes on:** (10 Marks)

- Ebulliometry.
- Microporous crosslinked polymers.

GOOD LUCK

**Examiners:**

Prof. Nehal A. Salahuddin

Dr. Wael A. Amer

UNIVERSITY OF CALIFORNIA  
 DEPARTMENT OF CHEMISTRY  
 CHEMISTRY 130C  
 EXAMINATION  
 DATE: \_\_\_\_\_  
 TIME: \_\_\_\_\_  
 NAME: \_\_\_\_\_  
 ID: \_\_\_\_\_

- (25 Marks)
1. Explain the effect of temperature on the flexibility of polymer chains. (5 Marks)
2. Describe the effect of the weight of the chain on mechanical properties. (5 Marks)
3. Explain the effect of the weight of the chain on the flexibility of crosslinked polymers. (5 Marks)
4. Explain the effect of the weight of the chain on the flexibility of crosslinked polymers. (5 Marks)

Question 5: Compare and contrast the structure and behavior of (10 Marks)

5. Explain the effect of the weight of the chain on the flexibility of crosslinked polymers. (5 Marks)

6. Explain the effect of the weight of the chain on the flexibility of crosslinked polymers. (5 Marks)

(10 Marks)

7. Explain the effect of the weight of the chain on the flexibility of crosslinked polymers. (5 Marks)

8. Explain the effect of the weight of the chain on the flexibility of crosslinked polymers. (5 Marks)