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	TANTA UNIVERSITY FACULTY OF SCIENCE DEPARTMENT OF CHEMISTRY			
	EXAMINATION FOR SENIORS (FOURTH YEAR)			
COURSE TITLE:	CHEMISTRY OF DYES	COURSE CODE: CH4208		
DATE:	27 MAY, 2015	TERM: SECOND	TOTAL ASSESSMENT MARKS: 50	TIME ALLOWED: 2 HOURS

**1- Give short notes about the following: (20 Marks)**

- a- Classification of dyes based on their origin.
- b- Preparation of different naphthol As.
- c- Careful control of the  $P_H$  of the medium in coupling diazonium salts with amines.
- d- Vat dyes.
- e- Protein Textile Dyes.

**2- Complete the following sentences: (15 Marks)**


- a- ..... used to test the light fastness of the dyed fabric, while ..... used to test the rubbing fastness of the dyed fabric.
- b- The color coordinates are:  $L \rightarrow$  Whether the sample is ..... or ..... [ $L=0$  (.....) to  $L=100$  (.....)],  $a^* \rightarrow$  if the sample is ..... (+a) or ..... (-a) and  $b^* \rightarrow$  if the sample is ..... (+b) or ..... (-b).
- c- Azo-compounds that contain both an ..... and a ..... group can be utilized as indicators since the colors of the ..... and the ..... are different. Example is.....

**3- Explain the following sentences (give examples) (15 Marks)**

- a- Carriers generally swell the fibers in dyeing process by using disperse dye.
- b- The type of metal complex azodyes depends on number of dyes molecule.
- c- To improve the wash fastness of direct dyed fabrics, after treatments are applied to increase the size of the dye molecule.

EXAMINER	DR. HALA FAWZY RIZK
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 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

	TANTA UNIVERSITY FACULTY OF SCIENCE CHEMISTRY DEPARTMENT		
	FINAL EXAM FOR SENIOR STUDENTS (ZOOLOGY AND DOUBLE MAJORS SECTIONS)		
	COURSE TITLE:	ENVIRONMENTAL CHEMISTRY (CH4224)	TIME ALLOWED:
DATE: MAY 30, 2015	TERM: SECOND	TOTAL ASSESSMENT MARKS: 50	2 HOURS

**Question 1: Write briefly on the following:**

**(15 marks)**

- Natural sources of hydrocarbons as organic pollutants.
- Show by equations sources and processes which cause entering aldehydes and ketones in atmosphere and showing its reactions.
- Formation of peroxide radicals and its reactions.
- Perfluorinated organic compounds (PFCs).
- Adsorption phenomenon.

**Question 2:**

**(10 Marks)**

- Write short account on chlorinated fluorocarbons (CFCs) as organic pollutants and draw the diagram indicating the formation of ozone Layer and the effect of CFCs compounds on it.
- Dyes consider as type of organic pollutants of water, show the methods which used for removal of dissolved dyes from industrial wastewater.

**Question 3: Write short notes on:**

**(12 Marks)**

- The photochemical processes that can occur in the atmosphere.
- Sources of arsenic as a water pollutant.
- Photochemical smog.

**Question 4: Give reason(s):**

**(8 Marks)**

- Water dissolves many ionic compounds and salts that do not dissolve in other liquids.
- Presence of low soluble Cd concentrations in the bottom layer of harbor water during periods of calm in the summer.
- Atmosphere is normally slightly acidic.
- The importance of the very high heat capacity of water than most of the other liquids or solids.

**Question 5: Differentiate between each of the following pairs:**

**(5 Marks)**

- Endogenic and exogenic cycles.
- Phenolphthalein alkalinity and the total alkalinity of water.

**GOOD LUCK**

**Examiners:**

Prof. El-Refaie S. Kenawy  
Dr. Wael A. Amer

Dr. Abd El-Baset M. Shokr

