NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY
DEPARTMENT OF APPLIED CHEMISTRY
END OF SECOND SEMESTER EXAMINATIONS – MAY 2004
ORGANIC INDUSTRIAL CHEMISTRY III – SCH 4215
TIME: 3 HOURS

INSTRUCTIONS TO CANDIDATES

Answer **ALL** questions from Section A and **ANY THREE** questions from Section B.

SECTION A

1. (a) Give Chemical Structures of each of the following:
   (i) Phenolics
   (ii) Aminoplasts
   (iii) Epoxies
   (iv) Polyesters
   (v) Polyamides

(5 marks)

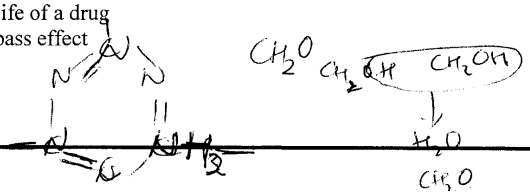
(b) Complete the following table:

Resin	Properties	Application
Phenolics	i)	i)
	ii)	ii)
	iii)	iii)
	iv)	iv)
Polyester	i)	i)
	ii)	ii)
	iii)	iii)
Acrylics	i)	i)
	ii)	ii)
	iii)	iii)

(10 marks)

(c) Differentiate between condensation and addition polymer products.
(5 marks)

(d) What do you understand by the following terms:
   (i) Bio-availability
   (ii) Half-life of a drug
   (iii) First pass effect



(iv) Drug interaction
(v) Therapeutic effect (10 marks)

(e) What is: (i) Epileptic seizure?
(ii) OTC drug?
(iii) Malt?
(iv) Laggering?
(v) Throughs? (5 marks)

(f) Write short notes on microbial organisms used in industrial fermentation processes. (5 marks)

SECTION B

2. (a) Give **five** factors that affect drug absorption in the human body (5 marks)

(b) With the aid of a diagram, **describe** in detail **one of** the following product manufacturing processes for: i) diazepum ii) aspirin (15 marks)

3. (a) Write short notes on the production of starch through the wet milling process (6 marks)

(b) With the aid of a diagram, describe the bulk polymerization of polystyrene. (10 marks)

(c) Outline **four** disadvantages of this technique of polymerization. (4 marks)

4. (a) Describe in **detail** the production of the three grades of phenolics i.e. *resite, resole* and *novolac* with special emphasis on catalysts used, temperature differences and cross linking requirements. (20 marks)

5. (a) What are vitamins? (2 marks)

(b) Give two classes of vitamins. (2 marks)

(c) Write short notes on the source, function and deficiency effect of the following vitamins: Ascorbic acid, Thiamine, Riboflavine and Nicotinic acid. (16 marks)

End of Question Paper