

NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY
DEPARTMENT OF APPLIED CHEMISTRY
END OF SEMESTER EXAMINATIONS – MAY 2002
ORGANIC INDUSTRIAL CHEMISTRY III – SCH 4215
TIME – (3) THREE HOURS

INSTRUCTIONS TO CANDIDATES

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

SECTION A (Answer all questions)

1. (a) Give five prerequisites of a good fermentation process. (5 marks)
- (b) What three microbial organisms make possible the processes in industrial fermentation? (3 marks)
- (c) What is the role of the following ingredients in beer production?
malt,
yeast and
hops. (6 marks)
- (d) What is an epileptic seizure? Name three types of seizures. (5 marks)
- (e) Give the therapeutic class of each of the following drugs:
valium,
tagamet,
indicin,
amoxil and
motrin. (5 marks)
- (f) What do you understand by the following terms:
(i) bioavailability of a drug
(ii) first pass effect
(iii) OTC drug (6 marks)
- (g) What is Trammendorff effect and how is it overcome? (5 marks)
- (h) Give five differences between condensation and addition polymer products. (5 marks)

SECTION B (Answer three questions)

2. (a) Describe the route of production of Aspirin from phenol and caustic soda. (10 marks)
- (b) Explain the use of Aspirin as:
(i) an analgesic
(ii) an anti-inflammatory
(iii) an antipyretic (6 marks)
3. For each of the following materials, explain the chemical route of production and give two properties for each material.
- (i) epoxy resins
(ii) amino resins
(iii) phenolics
(iv) polyester resins
(v) vinyl esters (20 marks)
4. (a) Give five differences between beers and wines. (5 marks)
- (b) With the aid of a flow diagram, describe the process of making beer with special emphasis on the following stages:
(i) brewing mash
(ii) fermentation
(iii) lagging (15 marks)
5. With the aid of a diagram, describe in detail the production of industrial alcohol from *any one* of the following:
(i) corn
(ii) ethylene (20 marks)

END OF QUESTION PAPER!!!