

**COURSE CODE:** CHM 312  
**COURSE TITLE:** INDUSTRIAL CHEMICAL PROCESSES 1  
**INSTRUCTION:** *Answer question 1 and any other 3 questions*

**CREDIT UNIT:** 2  
**TIME:** 2 HRS

**Question 1**

[2 marks each= 14 marks]

1. a. Define the following
- Brewing.
  - Malting
  - Oenology
  - Polymer
  - Monomer
  - Polymerisation
  - Adhesives

b. Classify pesticides based on origin

[8 marks]

c. Name the three phases of industrial production of penicillin

[3 marks]

**Question 2**

2a. Differentiate between thermosets and thermoplastics polymers

[8 marks]

b. State five unit operations techniques used in product recovering

[3 marks]

c. List four processes used during the process of manufacturing beer.

[4 marks]

**Question 3**

3. a. Draw the structure of monosodium glutamate

[3 marks]

b. i. Write briefly on feeling factor

[2 marks]

ii. Outline six advantages of emulsion polymerisation over other polymerisation techniques

[6 marks]

c. Outline four specific features of enzymes?

[4 marks]

**Question 4**

4. a. i. What is fermentation?

[2 marks]

ii. Give two types of flavouring agents

[2 marks]

b. Use chemical equation to show the preparation of benzaldehyde

[5 marks]

c. Write briefly on the classification of explosives

[6 marks]

**Question 5**