UNIVERSITY COLLEGE TATI

UNIVERSITY COLLEGE TATI (UCTATI)

FINAL EXAMINATION QUESTION BOOKLET

COURSE CODE	: DIP 1023
COURSE	: LATEX SCIENCE AND TECHNOLOGY
SEMESTER/SESSION	: 1-2024/2025
DURATION	: 3 HOURS

Instructions:

1. This booklet contains **5** questions. Answer **all** questions.
2. All answers should be written in answer booklet.
3. Write legibly and draw sketches wherever required.
4. If in doubt, raise up your hands and ask the invigilator.

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO

THIS BOOKLET CONTAINS 3 PRINTED PAGES INCLUDING COVER PAGE

QUESTION 1

a) Identify **THREE (3)** types of anticoagulants in the preservation of NR latex. (3 marks)

b) Choose the criteria that contribute to an ideal preservative. (7 marks)

c) The stability of preserved natural rubber latex can be influenced by several factors. Explain in detail **FIVE (5)** of the factors. (10 marks)

QUESTION 2

a) Explain the importance of latex concentration. (4 marks)

b) Produce the flow chart of the following processes:

i. Production of latex concentration (10 marks)

ii. Typical creaming process (6 marks)

QUESTION 3

a) Latex compounding is the process by which concentrated natural rubber latex is blended with various chemicals to get the desired properties. The mixture after adding the necessary ingredients is called compound. Identify **FIVE (5)** types of ingredients and determine their function. (10 marks)

b) Demonstrate the preparation of latex emulsion. (10 marks)

QUESTION 4

a) The formulation of pre-vulcanized latex involves blending natural rubber latex with several key ingredients. Explain **THREE (3)** of the ingredients. (6 marks)

b) Sketch the schematic illustration of the Sulphur pre-vulcanization reaction system. (10 marks)

c) Discover **TWO (2)** advantages and **TWO (2)** disadvantages of post-vulcanized latex. (4 marks)

QUESTION 5

a) Latex dipping is a technique used in industries based on the manufacturing of thin walls or thin-film latex products. Explain the principles of the following dipping processes: (12 marks)

i. Straight dipping
ii. Coagulant dipping
iii. Straight heat sensitizes dipping

b) Identify **FOUR (4)** defects in the dipping process. (4 marks)

c) A latex allergy is a reaction to certain proteins found in natural rubber latex, which is derived from the rubber tree. Predict **FOUR (4)** symptoms cause by latex allergy. (4 marks)

----------End of questions----------