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Form Number: OBE/TE/Spring-2026

Daffodil International University

Department of Textile Engineering

Faculty of Engineering

Final Examination, Semester: Spring-2026

Course Code: 0531-121 Course Title: Chemistry II

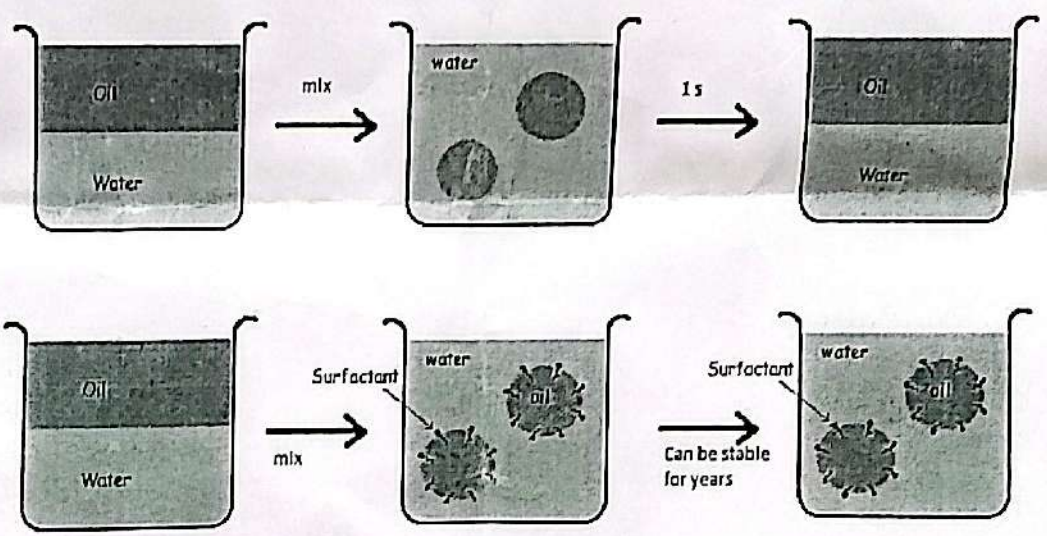
Level & Term: L1T3 Sections: H1,H2,H3,H4

Name & Designation of the Course Teacher: Dr. ABM Nazmul Islam (DNI), Assistant Professor

Time: 02 hours. **Total Marks: 40**

Answer all the questions:

1. a. **Analyze** the diagram in terms of emulsification of surfactants 3
[CO 2, PO 2, C/L 4]



b. **Appraise** the specialty of saponin and beta cyclodextrin as a biosurfactant. 6
[CO2, PO 2, C/L 4]

c. **Explain** the following: synthetic detergents and their classification. 6
[CO 2, PO 2, C/L 2]

2. a. **Sketch** the structural formulas of the following amino acids: lysine, valine, phenylalanine, and serine. Additionally, **prepare** one dipeptide and one tripeptide using any combination of these amino acids. 4+2
[CO 3 PO 1, C/L 2]

b. "Glycine acts as a zwitterion"- **explain**. **Illustrate** its behavior in basic solution. 2+4
[CO 3, PO 1, C/L 2]

c. **Elaborate** your understanding on chromophore. **Discuss** in detail the following classification of textile dyes: Disperse dye, vat dye, and mordant dye. 4+9
[CO 3, PO 1, C/L 2]