

**Daffodil International University**

B. Sc. in Civil Engineering

Mid-Term Examination, Summer - 2026

Course Title: Chemistry

Level-Term: 1-1

Date: July 01, 2026

Teacher's Initial: AAA, SRA

Time: 1.5 Hours

Course Code: CHE 101

Section: A, B, C

Full Marks: 25

*Note: There are five sets of questions in total. Answer all of them. Right hand margin indicates full marks. Please maintain the order while answering.*

1. (a) Distinguish between Homogeneous and Heterogeneous Mixtures. [CO1, C1] [03]  
 (b) Explain the significance of pH in aquatic life. [CO1, C1] [02]
2. (a) Describe the industrial manufacturing process of Portland Cement along with mentioning all the raw materials of Portland Cement. [CO2, C2] [05]
3. (a) Illustrate the applications of cement. [CO2, C2] [02]  
 (b) Compare between setting and hardening. [CO2, C2] [03]
4. (a) Calculate the mass percentage of glucose in a solution prepared by dissolving 10g of glucose into 100g of water. [CO4, C3] [02]  
 (b) Calculate the Molality of a solution prepared by dissolving 10 g of toluene ( $C_7H_8$ ) in 250 g of Benzene ( $C_6H_6$ ). [CO4, C3] [03]
5. (a) Change the concentration of 0.2M  $H_2SO_4$  into percentage. [CO4, C3] [02]  
 (b) Calculate the amount of NaOH required to prepare 500 mL, 0.5M solution. [CO4, C3] [03]