DUDHNOI COLLEGE
SESSIONAL EXAMINATION: DECEMBER- 2021
CHEMISTRY (HONOURS)
Paper: CHE-HC-1026: Physical Chemistry I

Semester I

Time: 1 hour
Full marks: 20

Answer all questions. The figure in the margin indicates the full mark for the question.

1. Answer any five of the following: 1x5=5

   a. What is the SI unit of gas constant R?

   b. Define critical temperature.

   c. What is the significance of Van der Waals constant 'a'?

   d. What is Collision Frequency?

   e. What is the relationship between viscosity coefficient η and temperature?

   f. Define cohesive and adhesive force.

   g. What is the structure of NaCl?

2. Answer any three of the following: 5x3=15

   a. What is Real gas? Show that at critical point: $V_c=3b$.

   b. Write Maxwell's molecular distribution law. Calculate the Most Probable Velocity from Maxwell's equation.

   c. Write two postulates of Kinetic Theory of gases. Show that: $pv=(mnc^2)/3$

   d. What is Surface Phenomenon? Explain the drop method.

   e. What is viscosity? How is viscosity calculated? What is the unit of viscosity coefficient η?