

**I-Mid-Term Examination**  
**Odd-Semester, 2017-18**

Program: B.Tech.  
Year:-I  
Time: 1 Hour

Branch: Computer Science & Engineering,  
Subject with Code: Engg.Chemistry, AHC1101  
Maximum Marks: 15

**Section-A**

Three questions of 02 marks each (with no internal choice).      **3 x 2 = 6 Marks**

- I. Differentiate Gross and Net Calorific value of a fuel.
- II. Draw the potential energy diagram for the various conformations of n-butane.
- III. What are ceramics? How are they classified?

**Section-B**

Three questions of 03 marks each (with no internal choice).      **3 x 3 = 9 Marks**

- I. Explain the following properties of lubricants and discuss their significance:  
a) Flash point and Fire Point      b) Cloud and Pour point
- II. A petroleum gas has the following composition. Ethane 10%, Propane 15%, Butane 75%. If 35% excess air is used, find the volume of air required for complete combustion per m<sup>3</sup> of the gas.
- III. Draw the molecular orbital diagram of O<sub>2</sub> molecule. Calculate bond order and predict magnetic behavior.