BABCOCK UNIVERSITY

SCHOOL OF BASIC AND APPLIED SCIENCE

DEPARTMENT OF BASIC SCIENCES

FIRST SEMESTER 2015/2016 SESSION EXMINATION

PHYSICAL CHEMISTRY (CHEM 403)

EXAMINER: DR ONIGBINDE A.O.   **TIME:** 2 HRS   **DATE**: DECEMBER, 2015

INSTRUCTION: ANSWER **ONLY** ONE QUESTION, EACH QUESTION CARRIES EQUAL MARK

1. Define the following
(i)   Specific Heat Capacity
(ii)   Calorimetry
(iii)   Bomb Calorimeter

 B. 20g of a ball bearing is immersed in a calorimeter at initial temperature of 25℃ and temperature was later increased to 28.5℃ at specific heat capacity of 0.382J/g. calculate the amount of heat evolved

C. Explain the principle of determination of Specific Heat Capacity of ethanol

2.   What are Volatile liquids?
(i)   Mention **FIVE** volatile liquids that you know
(ii)   What chemical formula is being used in determining molecular weight of a volatile liquid?

 (B.   At 99^0C and 750 torr, the vapor filling a 125.0 mL flask weighs 0.320 g). Calculate the Molecular weight using the ideal gas law.

 C. Explain the principles of determination of molecular weight of a volatile liquid

N.B   1atm = 760 torr