

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°C and temperature was later increased to 28.5°C 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°C 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