

**Ahmadu Bello University**  
**Department of Mathematics**  
**COSC211: Alternative to Practical Test I: March 2015**

**Instructions**

Attempt all questions. Time allowed: 60 mins.

1. Write a Java application that will compute and display the  $n$ th term and the sum of the first  $n$  terms of an AP (*arithmetical progression*). Its fields will be the *first term* and the *common difference*, both double, and the *number of terms* – an int.

[Hint: The  $n$ th term is given by  $T_n = a + (n - 1)d$  and the sum of the first  $n$  terms is given by  $S_n = \frac{n}{2}(2a + (n - 1)d)$ ]

2. Create a `CompoundInterest` class having fields `principal`, `rate` and `time` all being double. Compute and display the amount after 4 years given principal of ₦4,000.56 with a rate of 0.05

[Its value is given by  $\text{Amount} = P(1 + r)^t$  where  $P$  is the principal amount invested,  $t$  is the time period in years and  $r$  is the annual rate of interest expressed as a fraction.]

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