Course Title: Data Structures & Algorithms Analysis **Date:** 13 / 03 / 2017 **No. of Questions:** 4Questions **Time:** 1 hour **Using Calculator (No)**	**University of Palestine** **Midterm Exam** **2nd semester 2016/2017** **Total Grade: 15**	**Instructor Name:** Eng. Eman Alajrami **Student No.:** _____ **Student Name:** _____ **College Name:** IT **Dep. / Specialist:** _____ **Using Dictionary (No)**

First Question — No. of Branches (4) — (15 marks)

1. **Arrange the following Big O from the best (faster) to the worst. (2 marks)**

   N^2 - Log n - N - 1 - 2^n

   Answer:

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2. **Find the big O for the following code segment. Explain your answer.**

a. **(2 marks)**

```
for(s=1; s<=120; s++)
  system.ou.println( s*2);
```

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b. **(3 marks)**

```
for (int i = 0; i < n + 100; ++i )
{
    for (int j = 0; j < i * n ; ++j)
    {
        sum = sum + j;
    }

    for (int k = 0; k < n + n + n; ++k)
    {
        c[k] = c[k] + sum;
    }
}
```

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3. **Write a java code for the following Pseudo Code : (4 marks)**

Algorithm ***arrayMax*(*A*, *n*)**
Input array *A* of *n* integers
Output maximum element of *A*
***currentMax* ← *A*[0]**
for *i* ← 1 to *n* − 1 do
if *A*[*i*] > *currentMax* then
***currentMax* ← *A*[*i*]**
return *currentMax*

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4. **Write a java program that has an array list of 10 integers and fill it with unsorted values entered by the user. Then sort it by ascending order.**
Then declare another array list and move the values from the first array to the second one by reversed order. (descending)

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GOOD LUCK