

National College of Ireland

BSc. (Hons) in Computing – Full-time – Year 1 – BSHC1
BSc. (Hons) in Business Information Systems – Full-time – Year 1 – BSHBIS1
BSc. (Hons) in Technology Management – Full-time – Year 1 – BSHTM1
Higher Certificate in Computing – Full-time – Year 1 – HCC1
Higher Certificate in Business Computing – Full-time – Year 1 – HCBC1
BSc. (Hons) in Computing – Part-time – Year 1 – BSHCE1
Higher Certificate in Computing – Part-time – Year 1 – HCCE1

Semester 2 Examinations – 2017/2018

**Tuesday May 15th 2018
9.30am – 11.30am**

Introduction to Programming

Dr Jennifer McManis
Dr Rob Brennan
Dr Hugh O'Donnell
Frances Sheridan
Lisa Murphy
Sam Cogan

Answer All Questions in Section A and Section B
Section A to be answered in answer booklet
Section B to be saved on the exam drive

Duration of exam: 2 hours

Attachments: Syntax Sheet

Section A – to be answered in exam booklet**(30 marks Total)**

1. The following method from an instantiable class finds the minimum number in an array of integers called numbers.

```
1 public void computeMin(){
2     min = numbers[0];
3     for(int i = 1; i < numbers.length; i++){
4         if(numbers[i] < min){
5             min = numbers[i];
6         }
7     }
8 }
```

1. Give the code to declare and create the array of integers called numbers with a length of 10.
2. What changes would have to be made to this code to find the maximum number rather than the minimum?
3. In line 3, why is the variable i initialised to 1?
4. In line 5, what is the role of i?
5. Write the code snippet from the app class that would accept 10 numbers from the user and store them in the array.

(5 x 6 marks)**Section B - to be developed and saved on exam drive****(70 marks Total)**

2. Develop an application that allows the user to book a hotel room. The user should be asked for their name, the required number of nights, their age and a valid email address. The application should assume that each room costs 90 euro per night and then calculate and output the total cost to confirm the booking.

Please note: a booking can only be confirmed if the user is at least 18 and a valid email address is entered. A valid email address must contain an @ symbol.

- The application code should be suitably formatted and indented, appropriately commented, error free and should give appropriate output

(30 marks)

- The application should make use of instantiable classes. The instantiable class should contain appropriately declared data members, a suitable constructor, all necessary set and get methods and a suitable method to calculate the cost of the booking. The main class should declare all necessary variables and invoke all of the necessary methods of the instantiable class during input, processing and output.

(40 marks)