



Rewarding Learning

**ADVANCED SUBSIDIARY (AS)
General Certificate of Education
2014**

Centre Number

71

Candidate Number

Software Systems Development

Unit AS1:

Introduction to Object Oriented Development

[A1S11]

TUESDAY 20 MAY, AFTERNOON

TIME

2 hours.

INSTRUCTIONS TO CANDIDATES

Write your Centre Number and Candidate Number in the spaces provided at the top of this page.

Write your answers in the spaces provided in this question paper.

Answer **all** questions.

INFORMATION FOR CANDIDATES

The total mark for this paper is **100**.

Figures in brackets printed down the right-hand side of pages indicate the marks awarded to each question or part question.

ADVICE TO CANDIDATES

You are advised to take account of the marks for each part question in allocating the available examination time.

For Examiner's use only

Question Number	Available Marks	Marks	Remarks
1	10		
2	23		
3	21		
4	23		
5	9		
6	14		

Total Marks	100		
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(b) Write the body of code for the method:

```
public static int enter_No_Of_Items( int min, int max)
```

which will allow the user to enter a value for the number of items bought. The value should be validated in the range **min** to **max**. Your answer should include:

- **data declaration;**
- **prompt and Input statements;**
- **range check;**
- **error message control.**

[illegible]

Examiner Only	
Marks	Remark

(c) Write the body of code which will validate a telephone number for the method:

C#

```
public static bool validTelephoneNo( String telNo)
```

Java

```
public static boolean validTelephoneNo( String telNo)
```

to ensure that:

- the telephone number has a minimum length of nine characters;
- the first character may be the '+' character;
- all characters must be digits with the possible exception of the first character;
- the method should return true or false.

Your answer should include:

- data declaration;
- length check;
- '+' character check;
- digit check;
- true / false returned.

[7]

- (d) Write the code in the class method **main()** for the call statements to the two methods below:

C#

```
public static int enter_No_Of_Items( int min, int max)
public static bool validTelephoneNo( String telNo)
```

Java

```
public static int enter_No_Of_Items( int min, int max)
public static boolean validTelephoneNo( String telNo)
```

Assume the following variables have been declared and the telephone number, telNo, has been assigned a value:

noOfItems as type integer;
telNo as type string;
validTelNo as type boolean;
min as type integer;
max as type integer.

[2]

Examiner Only	
Marks	Remark

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(Questions continue overleaf)


```
// GET and SET (Properties/Methods)
```

[illegible]

```
// A method to determine delivery cost
```

[8]

Examiner Only	
Marks	Remark

4 An array is a static structure which is efficient in the processing of large amounts of data.

(a) Describe an array structure clearly identifying:

- three key aspects;
- how an array can be instantiated;
- how the first item within an array structure can be accessed.

[5]

Examiner Only	
Marks	Remark

- (ii) Discuss why a linear search method might not be effective for a large array of sorted numbers and why the **binary search** method would improve efficiency.

[3]

Examiner Only	
Marks	Remark

- 5 Explain **how** each of the following facilitates inheritance in classes (object templates).

encapsulation

overloading

overriding

[6]

Examiner Only	
Marks	Remark

Give three advantages of inheritance.

advantage 1

advantage 2

advantage 3

[3]

Examiner Only	
Marks	Remark

Handwriting practice lines consisting of 25 horizontal lines.

[10]

Examiner Only	
Marks	Remark

[Turn over

- (b) (i) Define an array named, **artWorksArray**, that is capable of holding details for 50 items of Artwork.

_____ [2]

- (ii) Populate artWorksArray[0] with sample details of a sculpture.

artWorksArray[0] = _____

_____ [2]

THIS IS THE END OF THE QUESTION PAPER

Examiner Only	
Marks	Remark

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