



*Rewarding Learning*

**ADVANCED**

**General Certificate of Education**

**2018**

**Centre Number**

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**Candidate Number**

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# Software Systems Development

Unit AS 1

Introduction to Object Oriented Development



SDV11

**[SDV11]**

**THURSDAY 24 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 six** 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	Marks available	Marks	Remark
1	10		
2	22		
3	14		
4	20		
5	23		
6	11		
Total	100		



**2** A class **Client** holds basic data about a company's clients.

**(a)** Complete the class definition for Client with:

(i) Appropriate **field types**;

```
class Client
{
```

```
private _____ clientNo;
```

```
private _____ companyName;
```

```
private _____ dateJoined;
```

```
private _____ telNo;
```

```
private _____ passWord;
```

```
private      char      rating;
```

[5]

(ii) A **field / parameterised constructor** where new clients are automatically assigned a rating of A (indicates a maximum credit amount of £2500);

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[5]

**(iii) GET and SET (Properties / Methods) for the field rating;**

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[4]

Examiner Only	
Marks	Remark



- 3 (a) Languages such as C# and Java provide many classes containing methods defined with the qualification **public static**. String is an example of such a class. Format is an example of a method within this class.

- (i) Used in the context of a method, give a brief description of the meaning of each word in bold.

**public**

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**static**

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\_\_\_\_\_ [2]

- (ii) Provide an example of a call to a public method from a class other than String.

\_\_\_\_\_ [1]

- (b) Passwords are commonly used to ensure legitimate access to a system. A common recommendation is that a password must have a minimum of seven alphanumeric characters where at least one character is an upper case letter and at least two characters are digits.

Write a method **validPassword** that will return a boolean value **true** if the password passed to the method is valid and **false** if the string does not meet this requirement.

(Hint: Character methods – isLetter, isDigit, isWhiteSpace. Ascii code for A is 65)

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Examiner Only	
Marks	Remark



**4** Exception Handling is a feature used to trap errors and prevent a system crash during runtime.

**(a)** Give an example of a specific error trapping class provided in C# / Java and indicate the type of error which will be caught.

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[2]

**(b)** Exception Handling can also be implemented in a class to ensure that an object cannot be instantiated or updated if the data is invalid.

The customised class `ClientException`, given below, can be used to facilitate the trapping of errors in a class `Client`.

# Java

```
class ClientException extends Exception{
//constructor
    public clientException(String message)
    {
        super(message);
    }
}
```

## C#

```
class ClientException : Exception{
//constructor
    public ClientException(String message)
    : base(message)
    {}
}
```

(i) Indicate what you understand by the term **Exception**.

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[2]

Examiner Only	
Marks	Remark







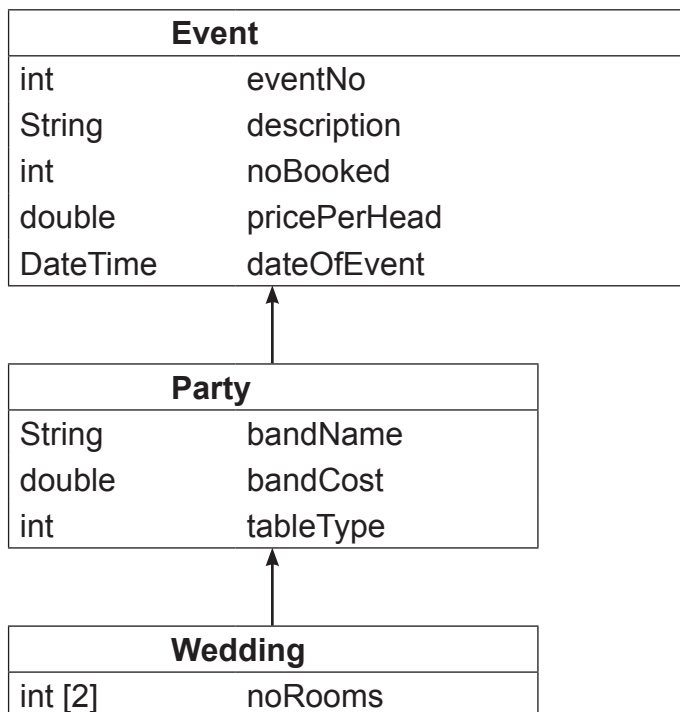
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**(Questions continue overleaf)**

- 5** A country house, Blackstone Nook, hires out its converted stables for events such as conferences, promotions, parties and wedding receptions. Accommodation, comprising three superior and four deluxe rooms, is available in the main house. A stipulation for weddings is that a minimum of three rooms must be hired. Prices are shown in the table below.

Room	Price per room per night (£)
Superior	175.00
Deluxe	130.00

Classes **Event** and **Party** have been designed for the structure detailed below with methods **income()** and **ToString()** available in both.

Inheritance diagram for Blackstone Nook.



(a) What qualifier is required for the methods **income()** and **ToString()** in the class **Party** when they support polymorphism?

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 [1]

**(b) (i)** Write the code for the derived class **Wedding** giving the following:

- class header;
- field definitions;
- field / parameterised constructor;
- GET and SET (Properties / Methods).

[illegible]





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