

ADVANCED
General Certificate of Education
2018

Centre Number							
Candidate Number							

Software Systems Development

Unit AS 1

Introduction to Object Oriented Development



[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	

Examiner Only

Marks Remark

Insert the Object Oriented **term** or **detailed definition** in the relevant spaces of the table below. 1

Object Oriented	Object Oriented	
Term	Definition	
	The creation of an object.	
		[1]
	The creation of a new class that reuses, extends and modifies the behaviour that is defined in another class.	[1]
derived / sub / child		
		[2]
Polymorphism		
Late Binding		[3]
Late billuling		
		[0]
		[3]

2

(i)	private private	d types;	<pre>clientNo; companyName; dateJoined;</pre>		
	class Client { private private private private private		companyName; dateJoined; telNo;		
	private private private private private		companyName; dateJoined; telNo;		
(ii)	private private private		companyName; dateJoined; telNo;		
(ii)	private private		dateJoined; telNo;		
(ii)	private		telNo;		
(ii)	private				
(ii)	-		passWord;		
(ii)	private	char			
(ii)		cnar	rating;	[5]	
(ii)				[0]	
				[5]	

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		[4]	
		[4]	

(b) Given the rating details in the table below, write code for a method MaximumCredit that will return the maximum credit amount a client may accumulate;

Examiner Only				
Marks	Remark			

Rating	Maximum Credit Amount £
A	2500.00
В	7500.00
С	10000.00
X	0
	[8]

11285 **5 [Turn over**

3	(a)	me	nguages such as C# and Java provide many classes containing thods defined with the qualification public static . String is an ample of such a class. Format is an example of a method within this ss.	Examiner Only Marks Rema
		(i)	Used in the context of a method, give a brief description of the meaning of each word in bold.	
			public	
			static	
			[2]	
		(ii)	Provide an example of a call to a public method from a class other than String.	
			[1]	
	(b)	sys min	sswords are commonly used to ensure legitimate access to a stem. A common recommendation is that a password must have a nimum of seven alphanumeric characters where at least one aracter is an upper case letter and at least two characters are digits.	
		the doe (Hir	ite a method validPassword that will return a boolean value true if password passed to the method is valid and false if the string es not meet this requirement. nt: Character methods – isLetter, isDigit, isWhiteSpace. Ascii code	
		TOT .	A is 65)	

		er Only
	Marks	Remark
[11]		

	eption Handling is a feature used to trap errors and prevent a system sh during runtime.	Examiner Only Marks Remark
(a)	Give an example of a specific error trapping class provided in C# / Java and indicate the type of error which will be caught.	
	[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)	
	<pre>{} }</pre>	
	(i) Indicate what you understand by the term Exception .	
	[2]	

ii)	Implement error trapping for an invalid telephone number in the class Client. Write the body of code for the SET that will throw back any error found or assign a valid telephone number to the class field telNo.								
	Call a p	Call a prewritten validation method validTelNo as given below							
	C# Java		validTelNo (String telNo) validTelNo (String telNo)						
	Do not write validation code for a telephone number								
	{								
				-					
				_					
				_					
				_					
				-					
				_					
				-					
				-					
				-					
				-					
				-					
				-					
	}		8]]					

	(iii)	The error trap for an invalid telephone number should also be considered for the field / parameterised constructor. Indicate how	Examine Marks	er Only Remark
		you would implement it.		
		[2]		
		[2]		
(c)	imp	rogram which allows a client's telephone number to be changed elements the modified Client class. Describe how a new telephone nber could be handled to ensure the program will not crash.		
		[6]		

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(Questions continue overleaf)

Examiner Only

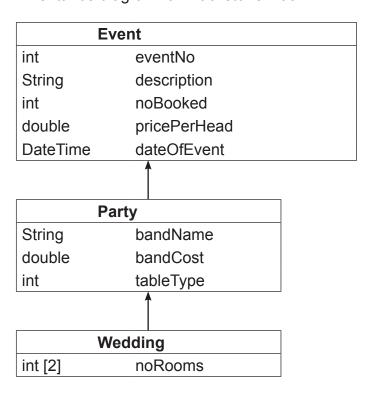
Marks Remark

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.



uic	class Party when they support polymorphism?	Marks R
	[1]	
(i)	Write the code for the derived class Wedding giving the following:	
	class header;field definitions;	
	 field / parameterised constructor; 	
	GET and SET (Properties / Methods).	

	seventy events.	
	Event [] arrayEvent = new Event[70];	
	[6]	
b)	The owner would like to compile statistical data about wedding events at Blackstone Nook. What additional code should be included to output the number of weddings and the total income generated from weddings?	
b)	at Blackstone Nook. What additional code should be included to output the number of weddings and the total income generated from	
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