CAMBRIDGE INTERNATIONAL EXAMINATIONS

Cambridge International Advanced Level

MARK SCHEME for the May/June 2015 series

9691 COMPUTING

9691/33

Paper 3 (Written Paper), maximum raw mark 90

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1 (a) (i) The table has a repeated (group of) attributes

[1]

(ii) Title, Genre, ReleaseDate and ReviewDate are repeated for each reviewer [1]

(b) (i)

ReviewerID	Location
510	London
808	New York
756	Dhaka

[1]

(ii)

Title	Genre	ReleaseDate	ReviewDate	ReviewerID
Hits 36	Р	12/01/2015	01-15	510
Popular Bach	С	12/01/2015	02-15	808
The Messiah	С	11/1/2014	11-14	756

Or, any other row taken from the original table (ReviewID must be different) [2]

3 correct - 2 marks

2 correct – 1 mark

1 correct only - scores 0

(iii) 9 [1]

(iv) Many-to-one [1]

(v) Primary key/ReviewerID in the REVIEWER table [1]

Links to foreign key/ReviewerID in the REVIEW table [1]

(c) (i) Title [1]

(ii) There are non-key attributes which are dependent (may be stated as part of the attribute description) (1)

ReviewerName is dependent on ReviewerID //
Fee is dependent on Genre (1) [2]

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ew FEE table			
			[5]
		[Total	
x diagram			[1]
ne rule is defined in terms of itself / calls itself			[1]
ALSE			
AO.			[1]
175N			
		(1) (1)	[2]
D58M			
alid		(1)	
ule 3 – once			
		(1)	[2]
86N			
		(1)	
ule 2 – once			
		(1)	[2]
		[Tota	ıl: 9]
E TELL Y TOUR STORY	EVIEWER(<u>ReviewerID</u> , Location, ReviewerName) EVIEW(<u>Title</u> , Genre, ReleaseDate,	EVIEWER (ReviewerID, Location, ReviewerName) EVIEW (Title, Genre, ReleaseDate, ReviewDate, ReviewerID) EEE (Genre, GenreFee) Bark as follows: Bew FEE table Intaining Genre and GenreFee Interior that is the service of the service o	EVIEWER (ReviewerID, Location, ReviewerName) EVIEW (Title, Genre, ReleaseDate, ReviewDate, ReviewerID) Ele (Genre, GenreFee) Lark as follows: Bay FEE table Intaining Genre and GenreFee EVIEW table has foreign key Genre EVIEWER table contains ReviewerName [Total A diagram Interviewer table contains ReviewerName Interviewer table contains ReviewerName [Total A diagram Interviewer table contains ReviewerName Interviewer table contains Revie

Mark Scheme

Syllabus

Paper

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Pa	ige 4	1	Syllabus	Pape			
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3	(a)	The	e class diagram includ	'es:			
		Sof	ftware + Network	subclasses		(1)	
		Bes	spoke + OffTheShe	elf subclasses of Software		(1)	
		Not	e: Two marks – corre	ct class names only			
		Red	cognised notation for i	nheritance (from Software and Network on	ıly)	(1)	
		Pro	oject class	StartDate : DATE ProjectLeader : STRING		(1)	
		Sof	Etware class	ProgrammingLanguage : STRING AlphaTesting : STRING/CHAR		(1)	
		For	each of the following	- <u>at least two</u> of the correct properties			
		Bes	spoke class	CustomerName : STRING AgreedCost : REAL/CURREN AgreedDeliveryDate : DATE	ICY	(1)	
		Off	ETheShelf class	Title : STRING BetaTesting : STRING/CHAR RetailPrice : REAL/CURRENCY SalesForecast : INTEGER		(1)	
		Net	twork class	ClientName : STRING AgreedCost : INTEGER/CURRENCY		(1)	[8]
	(b)	(i)	Class The definition of an o	object // The 'blueprint' from which objects are	created.		[1]
		(ii)	Inheritance The ability of a subcl parent/super/base cl	ass/child class to use properties and methods ass	of a		[1]
	(c)	(i)	Instance – A specific object	created from a class		(1)	
			- Main program ha	as created an instance of the <code>Network class-roject</code>	referred to	as (1)	[2]
		(ii)	Method Something an object	can do // Implemented with procedures/function	ons	(1)	

Project shows two methods - get_ProjectID() and set_ProjectID() (1) [2]

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		(iii)	Encapsulation Technique which restricts the programmer's access to the object's Data values can only be read/written using methods provided by the		(1) (1)			
			The ProjectID value can only be read/written using the two // ProjectID is private to the class	methods pro	ovided (1)	[3]		
					[Total:	17]		
4	(a)		st item in is the first item out // First item in is the last item out LIFO			[1]		
	(b)	PF	OCEDURE InitialiseStack FOR Index ← 0 to 99		(1)			
			Animal[Index] ← "" ENDFOR		(1)			
		ΕN	StackPointer ← -1 IDPROCEDURE		(1)	[2]		
	(c)	(i)	"" //empty string 1		(1) (1)	[2]		
		(ii)	PROCEDURE Push IF StackPointer = 99 THEN		(1)			
			OUTPUT "REFUSED - stack is full" ELSE					
			INPUT NewAnimal		(1)			
			StackPointer StackPointer + 1 Animal[StackPointer] NewAnimal		(1) (1)			
			ENDIF		()			
			ENDPROCEDURE			[4]		
	(d)	PF	OCEDURE Pop IF StackPointer = -1 THEN					
			OUTPUT "Stack is empty" ELSE OUTPUT Animal[StackPointer]					
		ΕN	StackPointer ← StackPointer - 1 ENDIF IDPROCEDURE					
		Te OU Ar	ark as follows est for empty with StackPointer = -1 TTPUT 'EMPTY' message imal[StackPointer] is value removed ecrement StackPointer			[1] [1] [1] [1]		
					[Total:	13]		

-	age			Caml	oridge	Inter		nal A		– Ma	y/June 2015	9691	33	
5	(a)	(i)	-23										(1)	
			E9										(1)	[2]
		(ii)	107										(1)	
			6B										(1)	[2]
		(iii)	127											[1]
		(iv)	Fewe	er digi	ts use	d to re	eprese	ent any	y num	ber //	long string difficult to	interpret	(1)	
			Less	likely	to ma	ke a r	nistak	e <u>whe</u>	n cop	ying/c	onverting a digit strir	ng	(1)	
			Easy	to co	nvert 1	from b	inary/	denar	y to h	ex (vic	ce versa) (than binar	y to denary)	(1)	
													[Ma	ıx 1]
	(b)			1	ı	ı	<u> </u>	ı	ı	ı	1			
		99	0	1	1	0	0	0	1	1				
		29	0	0	0	1	1	1	0	1	+			
			1	0	0	0	0	0	0	0				
		99	and 2	9 corre	ect pa	ttern							(1)	
		Coi	rrect a	dditio	n // ft								(1)	
	Overflow has occurred // the expected answer is outside the possible range // the answer is showing as –128								(1)	[3]				
	(c)	(i)	1578	3										[1]
		(ii)	1101	l is no	t a va	lid BC	D digi	t strin	g // 11	.01 re	presents '13'			[1]
													[Total:	: 11]
6	(a)	Sys	stems	flowch	nart									[1]
	 (a) Systems flowchart (b) • 1 – Text editor • 2 – on-screen errors • 3 – Compiler • 4 – Assembler • 5 – Linker • 6 – Program library code • 7 – Executable code 											[7]		
													[Tota	l: 8]

Mark Scheme

Syllabus

Paper

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P	Page 7		Mark Scheme	Syllabus	Paper	
			Cambridge International A Level – May/June 2015	9691	33	
7		Sing Cor Teri Cor File Fire Rou	rect use of any of the following: gle segment of wire nputers connected to the cable X 4 minators X 2 nputer C has attached printer server wall / Proxy server + Indication of a connection to the Internet iter + Indication of a connection to the Internet dem + Indication of a connection to the Internet	(1) (1) (1) (1) (1) (1) (1) (1)		
		Autl Mar	nage user accounts nenticate all logons nage the shared file storage nage the installation and use of applications software		(1) (1) (1) (1)	
					[Max 3]	
	. ,	Info Pro	anet rmation system using Internet protocols vides service of web pages (to client computers) rmation system only available to staff within the organisation		(1) (1) (1)	
					[Max 2]	
					[Total: 10]	
8	(a)	(i)	ChangeString ThisString1, ThisString2 (only)		(1) (1) [2]	
	((ii)	Ali J		[1]	
	(i	iii)	7 // Error if LEFT("", 1) generates an error		[1]	
	(i	iv)	JONES 8		[1]	
					[Total: 5]	