

Cambridge International Examinations

Cambridge International Advanced Subsidiary and Advanced Level

			1 hour 45 minutes
Paper 1 Theory	,	Oct	ober/November 2018
INFORMATION	TECHNOLOGY		9626/13
CENTRE NUMBER		CANDIDATE NUMBER	
CANDIDATE NAME			

Candidates answer on the Question Paper.

No Additional Materials are required.

READ THESE INSTRUCTIONS FIRST

Write your Centre number, candidate number and name in the spaces at the top of this page.

Write in dark blue or black pen.

You may use an HB pencil for any diagrams, graphs or rough working.

Do not use staples, paper clips, glue or correction fluid.

DO NOT WRITE IN ANY BARCODES.

Answer all questions.

Calculators must not be used in this paper.

At the end of the examination, fasten all your work securely together.

The number of marks is given in brackets [] at the end of each question or part question.

Any businesses described in this paper are entirely fictitious.



х л л л л о о о о



1 Tick the **four** most accurate statements regarding peer-to-peer and client-server networks.

	✓
Peer-to-peer networks must have a central server.	
Client-server networks generally offer greater security than peer-to-peer networks.	
Peer-to-peer networks can support millions of users with no loss of performance.	
The server will determine which users can access the files on a client-server network.	
In a client-server network each client functions both as a client and as a server simultaneously.	
If one computer crashes it has no effect on the other users in a client-server network.	
A client-server network is cheaper to set up than a peer-to-peer network.	
Peer-to-peer networks always require an employee to manage the network.	
In a peer-to-peer network only one computer is allowed to use the printer.	
In a peer-to-peer network computers can communicate and share files with every other computer on the network.	

[4]

2 Tick the **four** statements which are true regarding user interfaces.

	✓
The colours used in a dialogue interface are of key importance.	
A mouse is an essential input device when using a command line interface.	
A graphical user interface requires you to type in a large number of instructions.	
A command line interface is mainly used by more advanced computer users.	
A gesture based interface allows users to point with their fingers as a method of input.	
A command line interface needs menus and icons to operate it.	
A dialogue interface can interpret hand movements to carry out commands.	
A gesture based interface is very reliable as most users have similar gestures for communicating.	
The font size is the most important feature of a command line interface.	
A graphical user interface involves the use of windows and pointers.	

[4]

There are many types of data storage device including hard disk drives, solid state drives, optica drives and magnetic tape drives.
Describe the purpose of these storage devices and how they store data.
[8]

done to improve	erent groups of individuals do this situation.	not have a broadband conn	ection and what can be
			[6
Many application	ns use computer models to tri	al new processes.	
viarry application			
	packs of using a model to crea	ite and run simulations.	
Give four drawb	•		
Give four drawb	packs of using a model to crea		
Give four drawb	packs of using a model to crea		
Give four drawb	packs of using a model to crea		
Give four drawb	packs of using a model to crea		
Give four drawb	packs of using a model to crea		
Give four drawb	packs of using a model to crea		
Give four drawb	packs of using a model to crea		

6

	ead teacher wishes to computerise the marking of student exam papers. She is investigating tems that use optical mark recognition (OMR).
(a)	Give three advantages of using an OMR system compared to marking papers manually.
	1
	2
	3
	[3]
(b)	Give three disadvantages of using an OMR system compared to marking papers manually.
	1
	2
	3
	[3]

7

Describe, in detail, three different safety (apart from e-safety) issues that can arise from the use of IT. For each issue give one method of helping to prevent it. Each method must be different.
Issue 1
Prevention
Issue 2
Prevention
Issue 3
Prevention
[6]

8	Video-conferencing is a commonly used method of communication. It has an effect on differen sections of society.
	Describe the impact of video-conferencing on the following groups of people.
	General public
	Medicine – doctors, nurses and patients
	Education – teachers and students
	[6]

9 Schmidt and Partners own a chain of shoe shops. They pay their workers a weekly wage consisting of a basic wage plus commission. Workers only get paid commission if they have made \$500 worth of sales in that week.

The commission is paid at the rate of 10% of the amount of sales made over \$500. Below is a spreadsheet showing some of the workers and the wages they were paid in one week.

A	В	С	D	E	F	G
Sales person	Department	Value of sales	Basic wage	Commission		Total wage
Li Chung	Childrens	\$550	\$50	\$5		\$55
Graham Phillips	Adults	\$450	\$60			\$60
Karl Gustaph	Childrens	\$700	\$55	\$20		\$75
Paula Meldrew	Childrens	\$850				\$95
Shen Bin	Adults	\$1,000				\$105
Ram Babu	Childrens	\$350	\$45			\$45
Joan Adams	Childrens	\$780				\$83
Hu Zheng	Adults	\$620				\$77
	Adults	\$420	\$45			\$45
Ambrin Satem	Childrens	\$900	\$50	\$40		\$90
Tong Mu	Adults	\$940	\$60	\$44		\$104
Malcolm Novak	Adults	\$870	\$70	\$37		\$107
				\$131		
	Sales person Li Chung Graham Phillips Karl Gustaph Paula Meldrew Shen Bin Ram Babu Joan Adams Hu Zheng Louis Raphael Ambrin Satem Tong Mu	Sales person Department Li Chung Childrens Graham Phillips Adults Karl Gustaph Childrens Paula Meldrew Childrens Shen Bin Adults Ram Babu Childrens Joan Adams Childrens Hu Zheng Adults Louis Raphael Adults Ambrin Satem Childrens Tong Mu Adults	Sales person Department Value of sales Li Chung Childrens \$550 Graham Phillips Adults \$450 Karl Gustaph Childrens \$700 Paula Meldrew Childrens \$850 Shen Bin Adults \$1,000 Ram Babu Childrens \$350 Joan Adams Childrens \$780 Hu Zheng Adults \$620 Louis Raphael Adults \$420 Ambrin Satem Childrens \$900 Tong Mu Adults \$940	Sales person Department Value of sales Basic wage Li Chung Childrens \$550 \$50 Graham Phillips Adults \$450 \$60 Karl Gustaph Childrens \$700 \$55 Paula Meldrew Childrens \$850 \$60 Shen Bin Adults \$1,000 \$55 Ram Babu Childrens \$350 \$45 Joan Adams Childrens \$780 \$55 Hu Zheng Adults \$620 \$65 Louis Raphael Adults \$420 \$45 Ambrin Satem Childrens \$900 \$50 Tong Mu Adults \$940 \$60	Sales person Department Value of sales Basic wage Commission Li Chung Childrens \$50 \$5 Graham Phillips Adults \$450 \$60 Karl Gustaph Childrens \$700 \$55 \$20 Paula Meldrew Childrens \$850 \$60 \$35 Shen Bin Adults \$1,000 \$55 \$50 Ram Babu Childrens \$350 \$45 Joan Adams Childrens \$780 \$55 \$28 Hu Zheng Adults \$620 \$65 \$12 Louis Raphael Adults \$420 \$45 Ambrin Satem Childrens \$900 \$50 \$40 Tong Mu Adults \$940 \$60 \$44 Malcolm Novak Adults \$870 \$70 \$37	Sales person Department Value of sales Basic wage Commission Li Chung Childrens \$550 \$5 Graham Phillips Adults \$450 \$60 Karl Gustaph Childrens \$700 \$55 \$20 Paula Meldrew Childrens \$850 \$60 \$35 Shen Bin Adults \$1,000 \$55 \$50 Ram Babu Childrens \$350 \$45 Joan Adams Childrens \$780 \$55 \$28 Hu Zheng Adults \$620 \$65 \$12 Louis Raphael Adults \$420 \$45 Ambrin Satem Childrens \$900 \$50 \$40 Tong Mu Adults \$940 \$60 \$44 Malcolm Novak Adults \$870 \$70 \$37

Fig. 1

(a)	Write down the formula which should go in cell E4 which is easily replicable. It should calculate the commission earned but leave the cell blank if no commission is earned.
	=
	[5]
	You can use the space below for any working you need.
(b)	The shop manager wants to know the total commission the shop is paying to those workers in the Adults department who sold over \$800 worth of shoes.
	Write down a conditional formula which should go in cell E16.
	=
	[7]
	You can use the space below for any working you need.

Write down the formula he would enter into cell E18 to obtain this value. The formula means work even if the data in the spreadsheet changes in the future. =	The manage	er v	wishes	to know	the nu	mber of	worker	s who	did not e	arn an	y con	nmissi	on.
When the manager was originally given the spreadsheet by the IT technician it looked shown in Fig. 2 below: A B C D E F G H										value	. The	form	ula mu
When the manager was originally given the spreadsheet by the IT technician it looked shown in Fig. 2 below: A B C D E F G H	=												
Shown in Fig. 2 below: A B C D E F G H													
1 Sales per Departmer Value of Basic Wac Commission Total wage 2 3 Li Chung Childrens 550.00 50.00 50.00 55.00 60.00 4 Graham FAdults 450.00 60.00 60.00 5 Karl Gust Childrens 700.00 55.00 20.00 75.00 6 Paula Me Childrens 850.00 60.00 35.00 95.00 7 Shen Bin Adults 1000.00 55.00 50.00 105.00 8 Ram Bab Childrens 350.00 45.00 45.00 9 Joan Ada Childrens 780.00 55.00 28.00 83.00 10 Hu Zheng Adults 620.00 65.00 12.00 77.00 11 Louis Rag Adults 420.00 45.00 45.00 45.00 12 Ambrin Sa Childrens 900.00 50.00 40.00 90.00 13 Tong Mu Adults 940.00 60.00 44.00 104.00 14 Malcolm Nadults 870.00 70.00 37.00 107.00 15 16 131.00 Fig. 2 Explain, in detail, the features of spreadsheet software he had to use to change its appearant as shown in Fig. 2 to that shown in Fig. 1 (page 8), using the shortest number of steps. T			•	•	inally g	iven th	e sprea	dsheet	by the	T tech	nnicia	ın it lo	oked
1 Sales per Departmer Value of Basic Wac Commission Total wage 2 3 Li Chung Childrens 550.00 50.00 50.00 55.00 60.00 4 Graham FAdults 450.00 60.00 60.00 5 Karl Gust Childrens 700.00 55.00 20.00 75.00 6 Paula Me Childrens 850.00 60.00 35.00 95.00 7 Shen Bin Adults 1000.00 55.00 50.00 105.00 8 Ram Bab Childrens 350.00 45.00 45.00 9 Joan Ada Childrens 780.00 55.00 28.00 83.00 10 Hu Zheng Adults 620.00 65.00 12.00 77.00 11 Louis Rag Adults 420.00 45.00 45.00 45.00 12 Ambrin Sa Childrens 900.00 50.00 40.00 90.00 13 Tong Mu Adults 940.00 60.00 44.00 104.00 14 Malcolm Nadults 870.00 70.00 37.00 107.00 15 16 131.00 Fig. 2 Explain, in detail, the features of spreadsheet software he had to use to change its appearant as shown in Fig. 2 to that shown in Fig. 1 (page 8), using the shortest number of steps. T			Ι Δ	l B	l c	l D	F	F	l G	н			
3 Li Chung Childrens 550.00 50.00 5.00 55.00			4										
## Graham FAdults				01.11.1									
S							5.00						
6 Paula Me Childrens 850.00 60.00 35.00 95.00 7 Shen Bin Adults 1000.00 55.00 50.00 105.00 8 Ram Bab Childrens 350.00 45.00 45.00 9 Joan Ada Childrens 780.00 55.00 28.00 83.00 10 Hu Zheng Adults 620.00 65.00 12.00 77.00 11 Louis Rap Adults 420.00 45.00 45.00 90.00 12 Ambrin Sc Childrens 900.00 50.00 40.00 90.00 13 Tong Mu Adults 940.00 60.00 44.00 104.00 114 Malcolm NAdults 870.00 70.00 37.00 107.00 15 16 131.00 Fig. 2 Explain, in detail, the features of spreadsheet software he had to use to change its appearant as shown in Fig. 2 to that shown in Fig. 1 (page 8), using the shortest number of steps. T							20.00						
8 Ram Bab Childrens 350.00 45.00 45.00 9 Joan Ada Childrens 780.00 55.00 28.00 83.00 10 Hu Zheng Adults 620.00 65.00 12.00 77.00 11 Louis Rar Adults 420.00 45.00 45.00 45.00 12 Ambrin Standard Childrens 900.00 50.00 40.00 90.00 13 Tong Mu Adults 940.00 60.00 44.00 104.00 104.00 14 Malcolm Adults 870.00 70.00 37.00 107.00 15 16 131.00													
9 Joan Ada Childrens							50.00						
10 Hu Zheng Adults 620.00 65.00 12.00 77.00							20.00						
11 Louis Rap Adults													
Fig. 2 Explain, in detail, the features of spreadsheet software he had to use to change its appearar as shown in Fig. 2 to that shown in Fig. 1 (page 8), using the shortest number of steps. T													
Fig. 2 Explain, in detail, the features of spreadsheet software he had to use to change its appearar as shown in Fig. 2 to that shown in Fig. 1 (page 8), using the shortest number of steps. T					900.00				90.00				
Fig. 2 Explain, in detail, the features of spreadsheet software he had to use to change its appearar as shown in Fig. 2 to that shown in Fig. 1 (page 8), using the shortest number of steps. T													
Fig. 2 Explain, in detail, the features of spreadsheet software he had to use to change its appearar as shown in Fig. 2 to that shown in Fig. 1 (page 8), using the shortest number of steps. T				Adults	870.00	70.00	37.00		107.00				
Fig. 2 Explain, in detail, the features of spreadsheet software he had to use to change its appearar as shown in Fig. 2 to that shown in Fig. 1 (page 8), using the shortest number of steps. T							131.00			-			
Explain, in detail, the features of spreadsheet software he had to use to change its appearant as shown in Fig. 2 to that shown in Fig. 1 (page 8), using the shortest number of steps. T				1	1				1				
as shown in Fig. 2 to that shown in Fig. 1 (page 8), using the shortest number of steps. T						Fig. 2	2						
as shown in Fig. 2 to that shown in Fig. 1 (page 8), using the shortest number of steps. T	Evoloin in d	loto	sil the f	ooturoo	of apro	adabaa	t ooftwo	ro bo b	ad to use	to obc	nao i	ito opr	ooror
	•										_		
larger column water became 20 points was and the narrower one (column) / 12 points.													
	larger colair		Widths	occarric	20 poi	ito wide	and th	C Harro	WCI OIIC	(coluii	,	12 pc	iiito.

.....[5]

10 Below is a database showing a list of details about cars in a showroom.

	Reg_No →↑	Make -↑	Model →	Doors →	Colour +1
	L456 SRA	BMS	2000	7	Green
	B648 MAV	Opla	Valiant	7	Green
	M452 DQY	BMS	2000	5	Red
	M846 RCA	BMS	3000	5	Blue
	L678 RTS	Frod	Vic	5	Red
	B358 FCD	Opla	Eagle	5	Green
ı	F692 TEC	Opla	Eagle	5	Red
	S492 LZR	Opla	Artsa	5	Black
	N671 SAE	Vellox	Lemming	5	Black
	R762 VDA	Frod	Leo	4	Blue
	F457 REW	Opla	Eagle	4	Blue
	K789 KNM	Opla	Artsa	4	Blue
	X236 BEC	Opla	Eagle	4	Black
	Z341 TYU	Opla	Eagle	4	Green
	J456 REA	Vellox	Kestrel	4	Black
	L423 FRO	Vellox	Lemming	4	Blue
	L567 APQ	Vellox	Kestrel	4	Green

To find all Eagle models the search conditions would be Model = "Eagle".

(a)	Using only Boolean operands, comparison operators and wild cards, write down the most efficient search conditions which would produce lists of:		
	(i)	Reg_Nos beginning with the letter 'L'.	
		[2]	
	(ii)	Frod cars which are Blue.	
	(iii)	Eagles which are Red, Blue or Green.	
·	,	· · · · · · · · · · · · · · · · · · ·	

(b)	Describe how the database has been sorted to produce the one shown.
	[2]
(c)	Identify, giving reasons, the key field in the database. Give reasons why the other fields are not suitable.
	[2]

11	Normalisation is often used when converting a set of data into a meaningful database.				
	Discuss the advantages and disadvantages of normalisation.				
	[8]				

12	Encoding of data can be thought of as applying a code such as letters, symbols and numbers to data for conversion into a cipher. It can also be thought of as a form of analogue to digital conversion such as used by codec software. At times it is the term applied to the coding of data.
	Evaluate the need for encoding data and analyse the different methods that can be used to encode data.
	[8]

BLANK PAGE

BLANK PAGE

BLANK PAGE

Permission to reproduce items where third-party owned material protected by copyright is included has been sought and cleared where possible. Every reasonable effort has been made by the publisher (UCLES) to trace copyright holders, but if any items requiring clearance have unwittingly been included, the publisher will be pleased to make amends at the earliest possible opportunity.

To avoid the issue of disclosure of answer-related information to candidates, all copyright acknowledgements are reproduced online in the Cambridge International Examinations Copyright Acknowledgements Booklet. This is produced for each series of examinations and is freely available to download at www.cie.org.uk after the live examination series.

Cambridge International Examinations is part of the Cambridge Assessment Group. Cambridge Assessment is the brand name of University of Cambridge Local Examinations Syndicate (UCLES), which is itself a department of the University of Cambridge.