

OXFORD CAMBRIDGE AND RSA EXAMINATIONS Advanced GCE

INFORMATION AND COMMUNICATIONS TECHNOLOGY 2515

Communications Technology and its Application

Tuesday 21 JUNE 2005 Morning 1 hour 30 minutes

No additional materials are required. Candidates answer on the question paper.

Candidate Name	Cent	andidate Number			

TIME 1 hour 30 minutes

INSTRUCTIONS TO CANDIDATES

- Write your name in the space above.
- Write your Centre number and Candidate number in the boxes above.
- Answer all the questions.
- Write your answers, in blue or black ink, in the spaces on the question paper.
- Read each question carefully and make sure you know what you have to do before starting your answer.

INFORMATION FOR CANDIDATES

- The number of marks is given in brackets [] at the end of each question or part question.
- The total number of marks for this paper is 90, of which 4 marks are allocated to the assessment of the quality of written communication.
- You will be awarded marks for the quality of written communication where an answer requires a piece of extended writing.
- No marks will be awarded for using brand names of software packages or hardware.

FOR EX	AMINER'S USE
1	18
2	24
3	14
4	7
5	16
6	7
QWC	4
TOTAL	90

This question paper consists of 14 printed pages and 2 lined pages.

[6]

Answer all questions.

	ational DTF retail company offers a kitchen design service to its customers. Some of the ut devices used by the company are touch screens, graphics tablets and scanners.
(a)	Describe the purpose of each of these devices within the company.
	Touch Screen
	Graphics Tablet
	-
	Scanner

The company has shops throughout the country and uses a wide area network (WAN) for communication between these shops.

Customer details are stored in a distributed database.

(b)

Explain methods of distributing this database between the company's shops.
[6]

(c)

Explain the security measures involved in using distributed databases.
[6]

2	The syst	y hav tem.	ve fou ultant	nd tha	at their	comp	uter syst	tems		ole and decide	to invest in a nation	
	(a)		cribe cificat		differe	nce	betweer	n a	requirements	specification	and a syste	em
	(b)	(i)	Desc	ribe	the me						analysis stage	
	` ,	,							dental practice		, ,	
						• • • • • • • • • • • • • • • • • • • •						

	(11)	State Iour items which you would expect to see in this system specific	alion.
			[4]
(c)	Stat	ate where each of the following would fit into the system life cycle.	
	Req	equirements specification	
	Sys	stem specification	
			[2]

The consulting rooms and reception are equipped with a local area network (LAN). A bus topology is used.

(d)	Exp	lain the benefits and drawbacks of using a bus topology.
		[4]
The	LAN	I uses optical communications to carry data.
		Describe the meaning of the term 'optical communications'.
. - /	()	3
		[2]

	(ii)	Describe one advantage to the dental practice of using optical communications.
		[2]
(f)		lain the role of communications software to enable dialogue between network ices.
	••••	
		[4]

	ket switching munications.	and circu	it switching	are	methods	of data	transfer	used	in data
(a)	Explain each o	of these me	ethods.						
	Packet switching	ng							
						•••••			
		•••••				•••••			
	Circuit switchir	ng				•••••			
						•••••			
						•••••			[6]

The public telephone system uses circuit switching technology, whereas the Internet uses packet switching.

,	Explain the economic and technical reasons for preferring packet switching to circuswitching for the Internet.
	[4
)	Describe how errors which occur during data transmission can be detected an
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1)	Describe how messages are transmitted and received using satellites.

)	Customers use a form-based interface to access and use their bank accounts. Explain why this type of interface is suitable.
)	
))	Describe facilities that could be available as part of the human-computer interface (H
)	Describe facilities that could be available as part of the human-computer interface (H
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)	Describe facilities that could be available as part of the human-computer interface (H
)	Describe facilities that could be available as part of the human-computer interface (H to assist customers.
)	Describe facilities that could be available as part of the human-computer interface (H

me	easures that can be used to overcome them.	
•••		•••
• • •		
•••		• • •
•••		

(A government initiative has introduced 'wages' for students in the 16 to 18 age group order to qualify for the maximum payment a student has to achieve 100% attendance classes (lectures) and all homework and coursework must be submitted on time. Discuss how ICT might be used to decide the amount paid to each student.

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