

**INFORMATION AND COMMUNICATION TECHNOLOGY
PAPER 2 C**

**Multimedia Production and Web Site Development
Question-Answer Book**

11.15 am – 12.45 pm (1 hour 30 minutes)
This paper must be answered in English

INSTRUCTIONS

- (1) After the announcement of the start of the examination, you should first write your Candidate Number in the space provided on Page 1 and stick barcode labels in the spaces provided on Pages 1, 3, 5 and 7.
- (2) **ANSWER ALL QUESTIONS.** Write your answers in the spaces provided in this Question-Answer book. Do not write in the margins. Answers written in the margins will not be marked.
- (3) Supplementary answer sheets will be supplied on request. Write your candidate number, mark the question number box and stick a barcode label on each sheet, and fasten them with string **INSIDE** this book.
- (4) No extra time will be given to candidates for sticking on the barcode labels or filling in the question number boxes after the 'Time is up' announcement.

Please stick the barcode label here.

Candidate Number

--	--	--	--	--	--	--	--	--	--



Answer all questions.

1. Mr Ho is the technician at ABC Secondary School. He uses a recording system to store speeches given by the Principal. The system stores audio files using format P, with the following attributes:

Sampling rate: 22.05 kHz
 Sample size: 16 bits
 Number of channels: 2
 Data compression ratio: 10:1

- (a) Estimate the file size of a 1-minute speech in MB.

(2 marks)

- (b) (i) When Mr Ho increases the sampling rate from 22.05 kHz to 44.1 kHz, the sound quality is improved. Why?

- (ii) Mr Ho tries to use a sampling rate greater than 44.1 kHz but he does not feel that the sound quality is further improved. Why not?

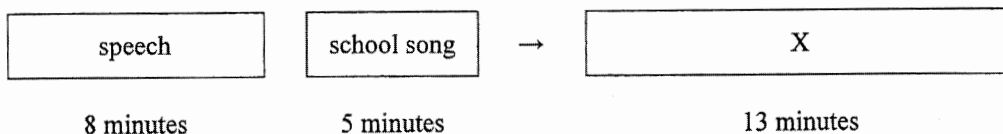
(2 marks)

Answers written in the margins will not be marked.

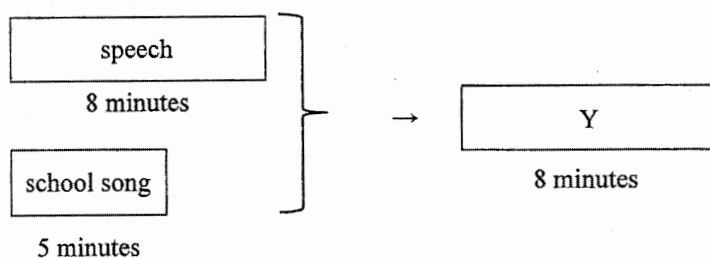
Please stick the barcode label here.

- (c) Mr Ho wants to combine a speech audio file and a school song audio file. There are two ways to combine the two files, as shown below.

Way 1:



Way 2:



- (i) When playing X, he finds that the transition from the speech to the school song is too sudden. Suggest and describe a transition effect to solve this problem.

- (ii) When making Y, the school song is embedded as the background music to the speech. What attributes of the audio files should Mr Ho consider? Give **two** examples.

(4 marks)

Answers written in the margins will not be marked.

Answers written in the margins will not be marked.

Answers written in the margins will not be marked.

The Principal wants to upgrade the system so as to broadcast videos using streaming technology. Mr Ho uses MPEG format for the videos at a transmission bit rate of 450 Kbps.

- (d) (i) 2 MB data needs to be downloaded before starting to play a video. Estimate the waiting time before the video can be played.

- (ii) The Principal thinks that the waiting time is too long. Suggest how to adjust one attribute of the video to reduce the waiting time.

(3 marks)

- (e) (i) The Principal wants to insert the school logo in the school web page. Mr Ho suggests using GIF format instead of JPG format. Justify his suggestion.

- (ii) The Principal wants to insert his photo in the school web page. Mr Ho suggests using PNG format instead of GIF format. Justify his suggestion.

- (iii) A user can select the background colour of the web page. When the user re-visits the web page, the previously selected background colour will be adopted automatically. What technique in web page design is involved for this? Describe the technique briefly.

(4 marks)

Please stick the barcode label here.

2. Eda signs up for a free email account from a web site. The signup page is shown below.

Signup		
Username:	<input type="text" value="edaho"/>	<i>Used</i>
Password:	<input type="text" value="123"/>	<i>Weak</i>
Re-type password:	<input type="text"/>	
<input type="button" value="Create an account"/> <input type="button" value="Cancel"/>		help?

- (a) (i) When Eda enters the username 'edaho', a message 'Used' appears. Describe how this message is generated by this web site.

- (ii) When Eda chooses the password '123', the strength of the password will be shown according to the following rules.

Password	Example	Strength
- less than 6 characters, or - numbers or letters only	123	<i>Weak</i>
- 6 characters or more, and - numbers and letters only	123abc	<i>Medium</i>
- 6 characters or more, and - numbers, letters and special characters	123abc#	<i>Strong</i>

Describe how the strength of the password is identified by this web site.

- (iii) On this signup page, the 'copy' and 'paste' functions are disabled. Why?

(5 marks)

Answers written in the margins will not be marked.

- (b) The signup page contains hyperlinks, a style sheet and metadata in different parts of its HTML code, as shown below.

```
<HTML>
<HEAD> Part A </HEAD>
<BODY>
<SCRIPT> Part B </SCRIPT>
Part C
</BODY>
</HTML>
```

Complete the following table.

Web page element	Function	Suggested part (A, B or C) and its justification
Hyperlink	Link to another web page.	
Style sheet	Create the layout of a document.	
Metadata		

(5 marks)

- (c) When Eda moves the mouse cursor over the 'Create an account' button, the colour of the button changes. Give one advantage of using each of the following designs to generate the button.

(i) Script

(ii) SWF file

(2 marks)

Please stick the barcode label here.

- (d) The size of the following image is 400×200 pixels while the size of the signup page is 800×600 pixels.



Suppose that this image is used as the background for the signup page. Describe **two** possible ways in which the image could be displayed in the signup page.

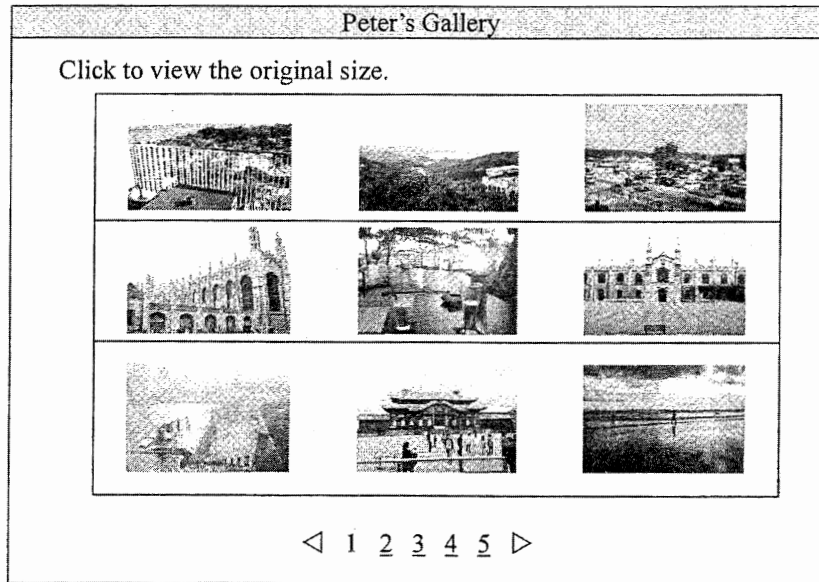
(2 marks)

Answers written in the margins will not be marked.

Answers written in the margins will not be marked.

Answers written in the margins will not be marked.

3. Peter is a photographer. He sets up a web site of his photos with resolution 3600×2700. In each web page of the web site, the thumbnails of nine photos are shown. When users click on a thumbnail, the corresponding photo will be displayed in its original size in a new window. The first page is shown below.



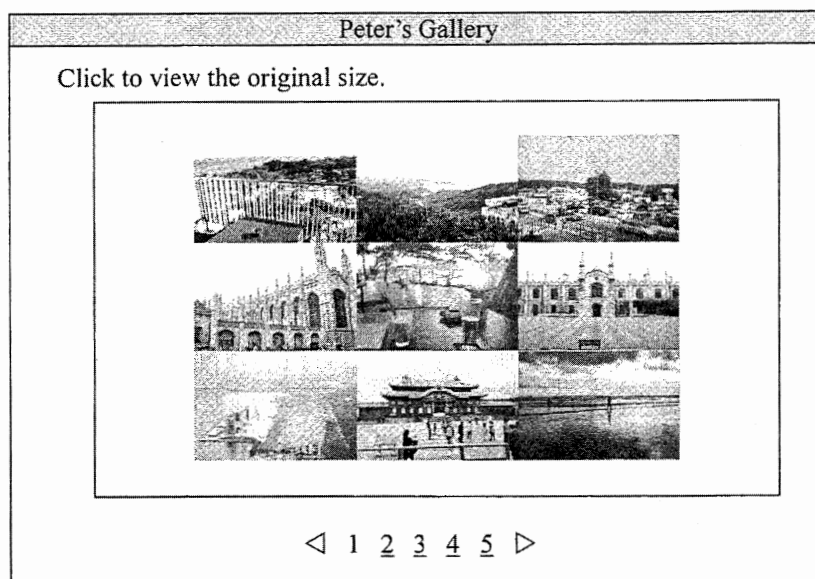
- (a) Give one reason to support the use of thumbnails and describe how Peter creates the thumbnails.

(2 marks)

- (b) Users comment that it is not very user-friendly to search for a photo. Suggest **two** ways to enhance photo searching.

(2 marks)

- (c) Peter re-designs the web page by combining nine photos into a single image as shown below. When a user clicks on a certain part of the image, the corresponding photo will be displayed in its original size in a new window.



- (i) What web page design feature does Peter use to implement this design? Describe the design feature briefly.

- (ii) Will visually-impaired users encounter any difficulty with this design? Justify your answer.

(4 marks)

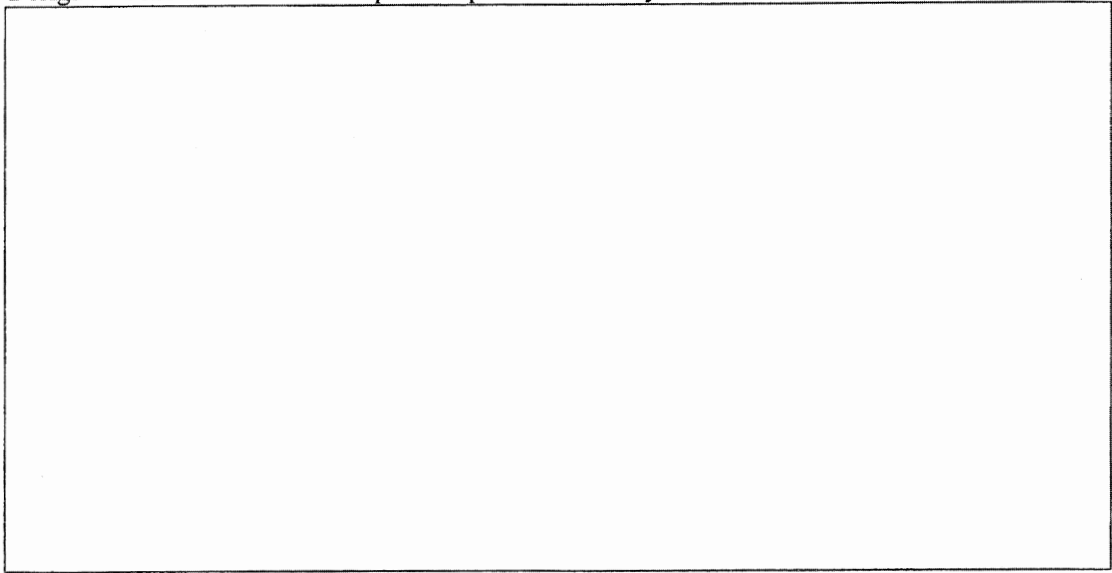
Answers written in the margins will not be marked.

Answers written in the margins will not be marked.

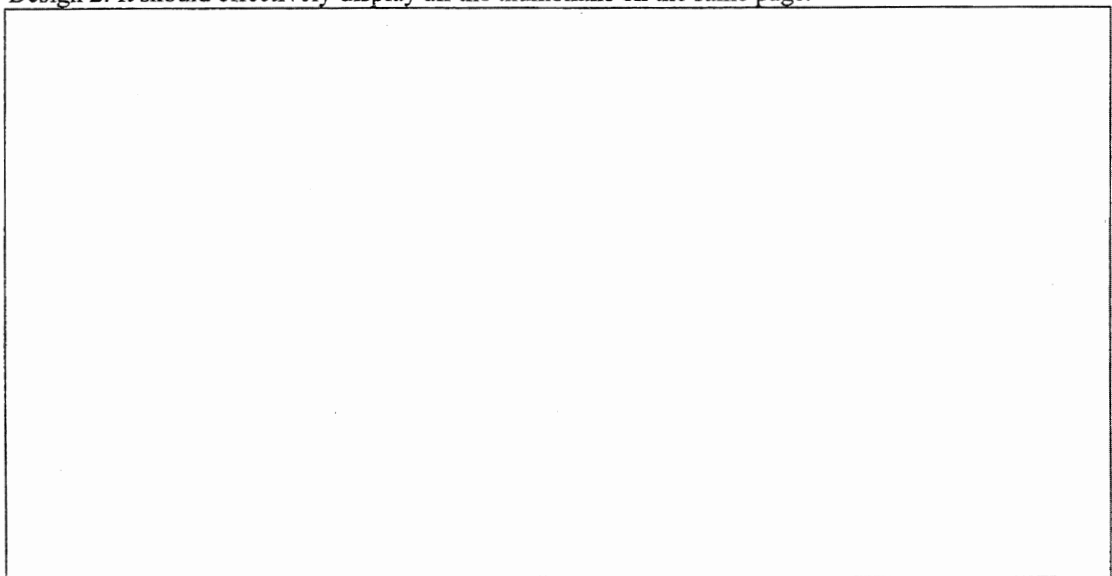
Answers written in the margins will not be marked.

- (d) Draft the layouts of two alternative designs and describe them briefly. The designs should include thumbnails and meet the requirements stated below.

Design 1: It should allow users to preview photos effectively.



Design 2: It should effectively display all the thumbnails on the same page.



(6 marks)

(e) Peter decides to use the service provided by a web hosting company.

(i) Give a reason to support Peter's decision.

(ii) The company provides a web interface for Peter to upload his photos, as shown below.

File:

However, Peter prefers using FTP software to upload the photos. Why?

(2 marks)

Answers written in the margins will not be marked.

Answers written in the margins will not be marked.

Answers written in the margins will not be marked.

4. Mr Li develops an online shopping web site to sell various types of toys to members.

- (a) Mr Li worries that hackers will try to log on to the web site with many usernames and passwords. Give two common methods to minimise the risk of this happening.

(2 marks)

Mr Li constructs a prototype to display the shopping list, as shown below.

Toys (Age 4-8)			
Shopping List			
Code	Description	Unit Price	+ / -
1015	Animal puzzle (100 pieces)	\$40	<input type="button" value="+1"/> <input type="button" value="-1"/>
0529	Red ball	\$25	<input type="button" value="+1"/> <input type="button" value="-1"/>
1375	Truck	\$99	<input type="button" value="+1"/> <input type="button" value="-1"/>
		Total:	\$164

- (b) (i) Suggest two columns to add to the table that could help customers shop and explain your suggestion briefly.

- (ii) Mr Li writes a script for the '-1' button and uses a variable $P[i]$ to store the quantity of toys ordered on the i -th row. When clicking the '-1' button on the i -th row, the value of $P[i]$ should change accordingly.

Describe how $P[i]$ is updated when the '-1' button is clicked.

(5 marks)

Answers written in the margins will not be marked.

When designing the response action of the 'Clear all' button, Mr Li decides to show a dialog window within the web page instead of a new web page, as shown below.

Code	Description	Unit Price	Quantity
1015	Animal puzzle (100 pieces)	\$40	-1
0509	Red ball	\$20	-1
1375	Duck	\$15	-1

Clear all records?

OK Cancel

Clear all Check out and pay

- (c) (i) What is the advantage of using the dialog window?

- (ii) Give **three** attributes of the dialog window that Mr Li can adjust.

(4 marks)

- (d) Mr Li wants to add a shopping cart to this prototype. Give **two** advantages of using a shopping cart.

(2 marks)

- (e) Mr Li will develop a mobile version of the web site. He needs to adjust the multimedia elements in the original web site. Give **two** reasons to explain why adjusting the multimedia elements is necessary.

(2 marks)

END OF PAPER

Answers written in the margins will not be marked.

Answers written in the margins will not be marked.

Answers written in the margins will not be marked.