

INFORMATION AND COMMUNICATION TECHNOLOGY

PAPER 2C

Multimedia Production and Web Site Development (Sample Paper)

Question-Answer Book

Time allowed: 1 hour 30 minutes
This paper must be answered in English.

INSTRUCTIONS

- (1) Write your Candidate Number in the space provided on Page 1.
- (2) Stick barcode labels in the spaces provided on Pages 1, 3 and 5.
- (3) Answer **ALL** questions.
- (4) Write your answers to Section B in the spaces provided in this Question-Answer Book. Do not write in the margins. Answers written in the margins will not be marked.
- (5) Supplementary answer sheets will be provided on request. Write your candidate number, fill in the question number and stick a barcode label on each sheet. Tie them loosely but securely with a string **INSIDE** this Question-Answer Book.

Please stick the barcode label here.

Candidate Number

	Marker's Use Only	Examiner's Use Only
	Marker No.	Examiner No.
Question No.	Marks	Marks
1		
2		
3		
4		
Total		

Answer all questions. Write your answers in this question-answer book.

(2006 CECIT 2D Q.3)

1. An Artist designed his own web page using three frames (A), (B) and (C). He would like to share his pictures as well as other information related to Art. Two of the display screens are shown below:

Screen 1: with <My Pictures> button pressed

(A) My Art Gallery 25-04-2006											
(B) <Home> <About Me> <My Pictures> <Exhibitions> <Forum> <Useful Links> <Feedback>	(C) <div style="text-align: center;">My Pictures</div> <div style="text-align: right;">Page 1 of 3 < 1 <u>2</u> 3 ></div> <table border="1" style="width: 100%; text-align: center;"> <tr> <td>Thumbnail 1</td> <td>Thumbnail 2</td> <td>Thumbnail 3</td> </tr> <tr> <td>Thumbnail 4</td> <td>Thumbnail 5</td> <td>Thumbnail 6</td> </tr> <tr> <td>Thumbnail 7</td> <td>Thumbnail 8</td> <td>Thumbnail 9</td> </tr> </table>		Thumbnail 1	Thumbnail 2	Thumbnail 3	Thumbnail 4	Thumbnail 5	Thumbnail 6	Thumbnail 7	Thumbnail 8	Thumbnail 9
Thumbnail 1	Thumbnail 2	Thumbnail 3									
Thumbnail 4	Thumbnail 5	Thumbnail 6									
Thumbnail 7	Thumbnail 8	Thumbnail 9									

Screen 2: with <Exhibitions> button pressed

(A) My Art Gallery 25-04-2006																																																	
(B) <Home> <About Me> <My Pictures> <Exhibitions> <Forum> <Useful Links> <Feedback>	(C) <div style="text-align: center;">Exhibitions Information</div> <table border="1" style="width: 100%; text-align: center;"> <thead> <tr> <th></th> <th>Type</th> <th>Artist</th> <th>Venue</th> <th>Date</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>Water Colours</td> <td>Big Bug</td> <td>Town Hall</td> <td>01-03-2006</td> </tr> <tr> <td>2.</td> <td>Sculpture</td> <td>Ah Ching</td> <td>Cultural Centre</td> <td>03-06-2006</td> </tr> <tr> <td>3.</td> <td>Chinese Painting</td> <td>Big Bug</td> <td>Cultural Centre</td> <td>07-09-2006</td> </tr> <tr> <td>4.</td> <td>Water Colours</td> <td>Ah Ching</td> <td>Town Hall</td> <td>30-04-2006</td> </tr> <tr> <td>5.</td> <td>Chinese Painting</td> <td>Peterson</td> <td>Town Hall</td> <td>27-12-2006</td> </tr> <tr> <td>6.</td> <td>Water Colours</td> <td>Little Bell</td> <td>Cultural Centre</td> <td>16-09-2006</td> </tr> <tr> <td>7.</td> <td>Water Colours</td> <td>Peterson</td> <td>Community Hall</td> <td>11-05-2006</td> </tr> <tr> <td>8.</td> <td>Chinese Painting</td> <td>Little Bell</td> <td>Cultural Centre</td> <td>12-08-2006</td> </tr> </tbody> </table>					Type	Artist	Venue	Date	1.	Water Colours	Big Bug	Town Hall	01-03-2006	2.	Sculpture	Ah Ching	Cultural Centre	03-06-2006	3.	Chinese Painting	Big Bug	Cultural Centre	07-09-2006	4.	Water Colours	Ah Ching	Town Hall	30-04-2006	5.	Chinese Painting	Peterson	Town Hall	27-12-2006	6.	Water Colours	Little Bell	Cultural Centre	16-09-2006	7.	Water Colours	Peterson	Community Hall	11-05-2006	8.	Chinese Painting	Little Bell	Cultural Centre	12-08-2006
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Please stick the barcode label here.

(a) Describe the functions of the three frames (A), (B) and (C).

(3 marks)

(b) Give one advantage and one disadvantage of using frames in a web page.

(2 marks)

(c) All pictures in Screen 1 have the original resolution of 2272×1704 pixels.

- (i) When a thumbnail is clicked, it shows a picture corresponding to the thumbnail with a resolution of 640×480 pixels within frame (C) even though frame (C) has a resolution of 1024×768 pixels. Explain briefly why the artist designs like this.

- (ii) What is the aspect ratio of the pictures? Each thumbnail in Screen 1 is designed to have a resolution of 125×75 pixels. Do you think that this is a good design? Justify your answer.

(4 marks)

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- (d) In Screen 2, the list should contain information on 20 exhibition events. How can we view the rest of the events? In order to make it easier for users to find information, the artist built in four sub-heading buttons in Screen 2. Describe briefly how these buttons function.

(3 marks)

- (e) When the cursor is placed on the <Feedback> button, the bottom status line on the browser shows `mailto:admin@artgallery.com.hk`. What happens when the user clicks on the mouse at this moment? Recommend another method for collecting feedback.

(2 marks)

- (f) The artist has now decided to host his web site by building his own web server. Give a reason to support his decision.

(1 mark)

Please stick the barcode label here.

(New Question)

2. A teacher would like to write a web page for students to practise arithmetic, as follows:

Basic Arithmetic	
1. $3 + 4 =$	<input type="text"/>
2. $7 + 6 =$	<input type="text"/>
3. $8 + 5 =$	<input type="text"/>
4. $9 - 2 =$	<input type="text"/>
5. $8 - 6 =$	<input type="text"/>
<input type="button" value="Submit"/>	

The students can enter the answer of each question in the corresponding text box. When the “Submit” button is clicked, the web page will check whether the answers are correct, and the results will be displayed in a pop-up message box, as shown below:

Results	
1. $3 + 4 = 7$	(Correct)
2. $7 + 6 = 15$	(Incorrect)
3. $8 + 5 = 13$	(Correct)
4. $9 - 2 = 6$	(Incorrect)
5. $8 - 6 = 2$	(Correct)
<input type="button" value="OK"/>	

- (a) Identify whether HTML or JavaScript should be used to perform the following tasks:

- (i) Show the highlighted title: _____
- (ii) Set the text boxes for accepting answers: _____
- (iii) Check the correctness of answers: _____
- (iv) Set background music: _____

(4 marks)

Answers written in the margins will not be marked.

- (b) The teacher would like to display an image with 1024×768 pixels at the centre. However, the display of the image through a browser is not what he expected. Comment on the problems he has encountered.

(2 marks)

- (c) If the teacher wants to generate the numbers in the arithmetic questions randomly, does he need other resources other than HTML and JavaScript? Explain briefly.

(2 marks)

- (d) The checking of the answers is now processed on the client side. Suggest a script in the web page for doing the checking, and give **two** advantages of checking answers on the client side.

(3 marks)

- (e) Is it possible for the teacher to know the performance of the students from the web page? If yes, describe how the teacher would get the data from the system; otherwise, suggest a way to collect the data.

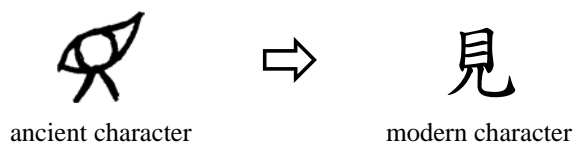
(3 marks)

- (f) The teacher would like to produce web pages using animation software with action scripts instead. Give one advantage and one disadvantage of this method.

(2 marks)

(New Question)

3. Mr. Wong wants to design a demonstration tool for showing how an ancient Chinese character changes to its modern shape by morphing. For example,



- (a) Give one advantage and one disadvantage of using presentation software to design the demonstration.

Advantage :

Disadvantage :

(2 marks)

- (b) Animation software A can generate the interim scenes automatically according to the tweening style selected. The product can also be exported as an animated GIF file.

- (i) Give one advantage and one disadvantage of using software A to design the demonstration.

Advantage :

Disadvantage :

- (ii) The number of interim scenes generated in the demonstration can be affected by many attributes. Give **two** of them.

- (iii) Besides the number of scenes, give **two** attributes that affect the file size of the exported animated GIF.

(6 marks)

Answers written in the margins will not be marked.

- (c) Mr. Wong has to design the demonstration as a 10-second animation which will play continuously at the entry of an exhibition. He is now considering two options for timeline control:

Option 1: Morph from second 0 to second 10.

Option 2: Show the ancient character from second 0 to second 2, morph from second 2 to second 8, and then show the modern character from second 8 to second 10.

Which option will you commend to Mr. Wong? Explain briefly.

(2 marks)

- (d) Some professionals suggest that the frame rate should be greater than 20 frames per second.

(i) Do you agree this suggestion? Explain briefly.

(ii) Should the frame rate be very large, for example, 100 frames per second? Explain briefly.

(4 marks)

(2006 CECIT 2D Q.2)

4. Audio sounds are captured and converted into digital data using a sound card before they can be processed in a personal computer. This conversion process is called digitisation and the digitised data are commonly stored in WAVE file format. The quality of the sound reproduced depends on the sampling rate and the sample size of the digitisation process. Different sound qualities using different sampling rates and sample sizes are shown in the following table:

Sound Quality	Sampling Rate (kHz)	Sample Size (bits)
A	8	8
B	11.025	8
C	22.05	16
D	44.1	16

- (a) What is the meaning of sampling rate? How does it affect the sound quality?

(2 marks)

- (b) What is the meaning of sample size? How does it affect the sound quality?

(2 marks)

- (c) Calculate the file size (uncompressed) of a one-second mono sound file of Sound Quality D.

(1 mark)

- (d) Sound Quality A is usually used for telephone conversations. Explain briefly why.

(2 marks)

- (e) Describe one advantage and one disadvantage of storing audio sounds in WAVE file format.

(2 marks)

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- (f) An audio clip in WAVE file format is converted into MP3 file format using a software package. Describe the main characteristics of this MP3 file and its **two** advantages.

(3 marks)

- (g) In the conversion (f), an encoder of encoding bit rate 64 kbps is used. If a greater encoding bit rate of 128 kbps is used to do the conversion, what will be its effect on the file size of the sound file? Explain briefly.

(1 mark)

- (h) Suggest one audio file format which is suitable for music composing and editing. Describe its main characteristics.

(2 marks)

END OF PAPER

Answers written in the margins will not be marked.