HONG KONG EXAMINATIONS AND ASSESSMENT AUTHORITY
HONG KONG DIPLOMA OF SECONDARY EDUCATION EXAMINATION 2017

INFORMATION AND COMMUNICATION TECHNOLOGY

PAPER 2C

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.

Provided by dse.life

Answer all questions.

1.   A studio provides photo taking and printing services. Customers can obtain all the soft copies after photo-taking. All the photos are 24-bit true colour with the resolution 5472 × 3648.

(a) (i)   What is the aspect ratio of the photos?

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(ii)   The photos will be printed on 8R photo paper (8 inches × 10 inches). There are two options for the printing quality of the printer, 600 dpi and 2400 dpi. Which option should customers choose? Justify your answer.

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(3 marks)

(b)   Customers can use their photos to generate animation in GIF or SWF format. Give **three** major differences of the two formats.
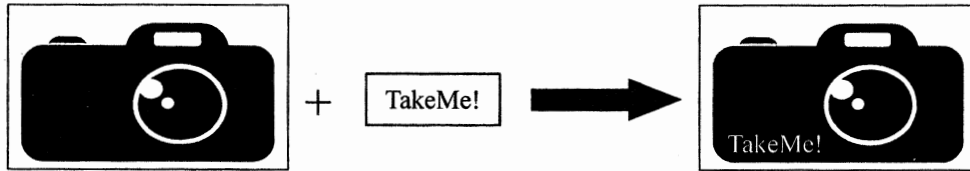
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(3 marks)

The studio plans to design its company logo and use it on its web site. The logo is formed using two images, a camera figure and the company name, as shown below:
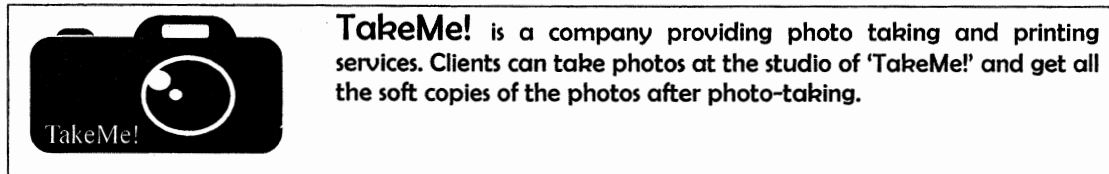

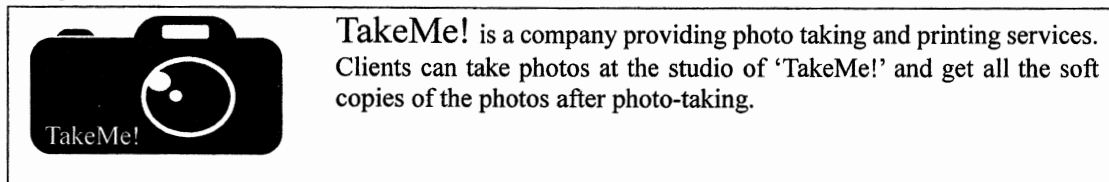(c) Briefly describe how to create the logo.

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(2 marks)

The studio finds that a browser displays its web page on two computers differently, as shown below:

Computer A

TakeMe! is a company providing photo taking and printing services. Clients can take photos at the studio of 'TakeMe!' and get all the soft copies of the photos after photo-taking.

Computer B

TakeMe! is a company providing photo taking and printing services. Clients can take photos at the studio of 'TakeMe!' and get all the soft copies of the photos after photo-taking.

(d) (i) Why does the browser display the web page on two computers differently? Explain briefly.

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(ii) Suggest a web page design solution to solve the problem in (d)(i).

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(2 marks)

(e) A customer takes photos with the same camera and settings and save the photos with the same compression method. He finds that the file sizes of the photos are different from each other. Why? Explain briefly.

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(2 marks)

(f) A customer considers using JPG, RAW and TIFF formats for photo-taking.

(i) Give an advantage of using RAW over JPG.

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(ii) Give an advantage of using TIFF over RAW.

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(2 marks)

2. The Graduation Committee in a school plans to record the collective memory of the graduates. Peter is a member of the Committee. In the graduation dinner, he will record the Principal's speech. Then he will mix it with the school song. The specifications of the recording are

Sampling rate:	44.1 kHz
Sample size:	16 bits
Number of channels:	2
Duration:	1 minute

(a) Estimate the file size of the recording in MB. Show your calculation.

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(2 marks)

(b) Peter wants to create an instrumental version of the school song. He decides to use MIDI format instead of WAV format.

  (i) Give **two** reasons to support Peter's decision.

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  (ii) Describe how Peter can create the school song in MIDI format.

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(3 marks)

(c) The final audio recording, which will be played on graduation day, lasts for 10 minutes. The file size of the audio file is too large. Suggest **two** ways to reduce the file size without changing the file format.

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(2 marks)

Answers written in the margins will not be marked.

The Graduation Committee creates a web site to deliver graduation information to the graduates.

(d) When browsing the web site, important news will be announced in a pop-up window. Give **three** attributes of the pop-up window, other than the window size.

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<div align="right">(3 marks)</div>

The web site contains the following Web Page A, Web Page B and Web Page C. Frames are used in the web pages.

Web Page A

Web Page B

Web Page C

(e) Peter wants to embed the school song in the web site. Describe how he can do this in each of the following cases.

(i) Play the school song when browsing Web Page A.

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(ii) Play the school song repeatedly when browsing Web Page A.

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(iii) Play the school song only after logging on to the web site.

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(iv) Play the school song when browsing Web Page A. The school song will still play continuously without any intervention when clicking 'Graduation Day' or 'Graduation Dinner' to browse Web Page B or Web Page C.

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(4 marks)

3.   HK Cinema owns several cinemas in different districts. Customers can use an online ticketing service on its web site to buy movie tickets. Mr Li is the IT manager of the company. He is going to develop a mobile version of the web site for customers to browse on a smartphone.

(a) Smartphones have a Global Positioning System (GPS) function. The web site makes use of the function to provide additional services for customers. Give **two** examples of these additional services.

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(2 marks)

(b) When each of the following tasks is carried out in the web site, should a client-side script or a server-side script be used? Justify your answer.

(i) Check the availability of seats for a certain show time.

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(ii) Check whether the number of movie tickets to be bought is greater than 0.
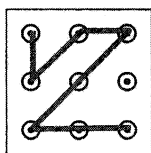
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(4 marks)

(c) Members of HK Cinema can log on to the web site to enjoy its services. Mr Li considers the following three login methods.
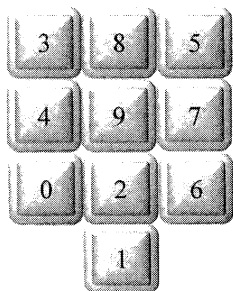
Method 1: Recognise a fingerprint.

(i) Suggest another example of biometric authentication for Mr Li to consider.

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Method 2: Draw a pattern with straight lines.

(ii) Suggest an improvement on the design to enhance the security.

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Method 3: Input a sequence of digits on a keypad where buttons of the 10 digits are randomly displayed on different positions for each login.

(iii) Give a reason to support the random display.

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(3 marks)

(d) A web page on the web site displays thumbnails of about 40 movie stills. When a thumbnail is clicked, the information of the movie will be displayed. Mr Li is not satisfied with the navigation of the web page on a smartphone, as shown below:
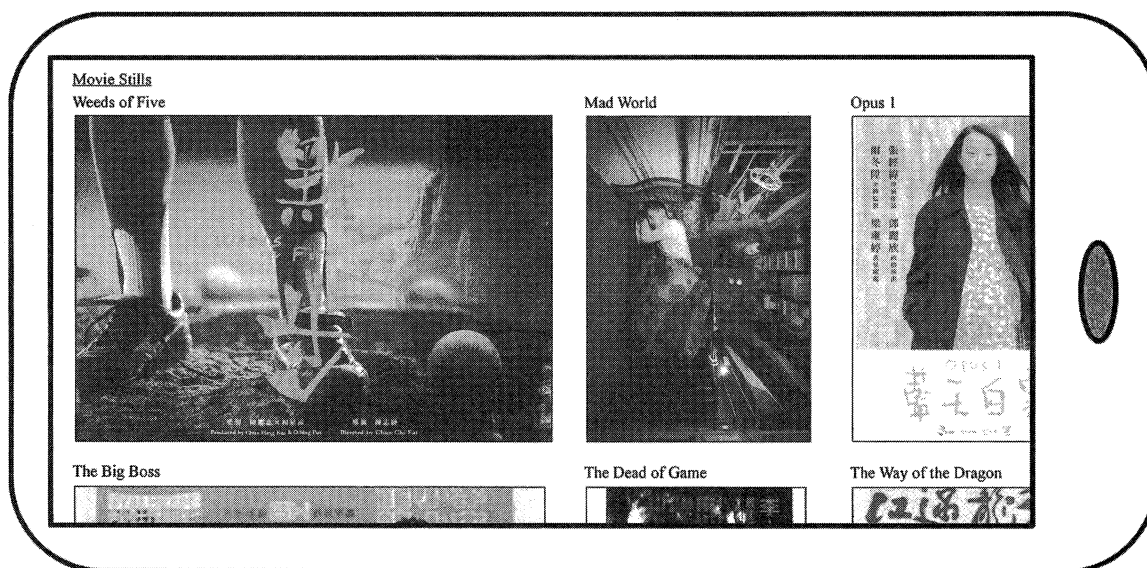
Draft the layout design of the mobile version of the web page shown above and describe how to use it.
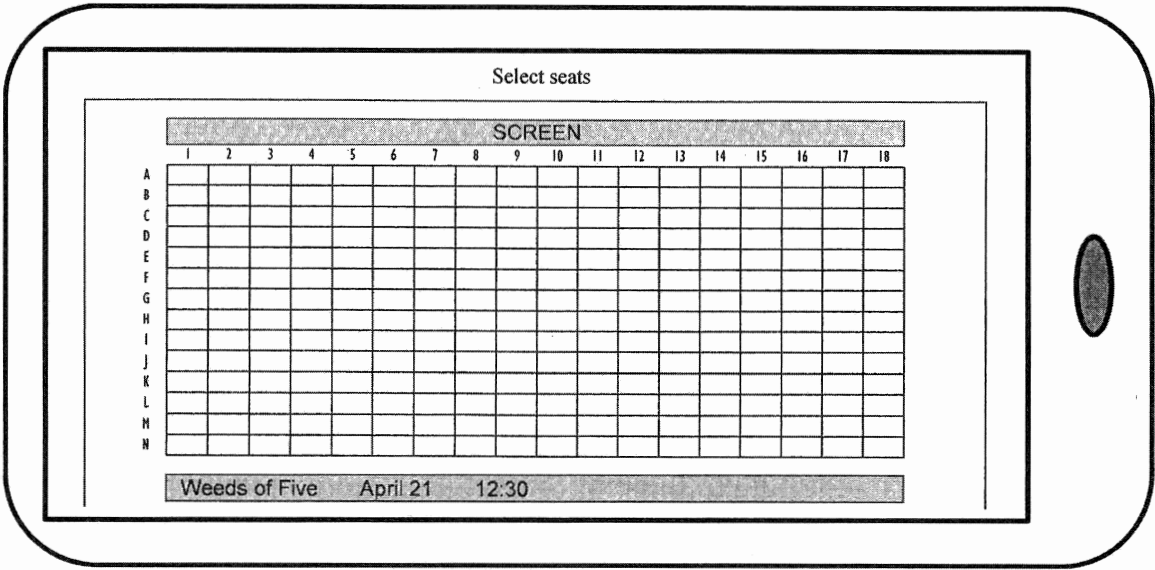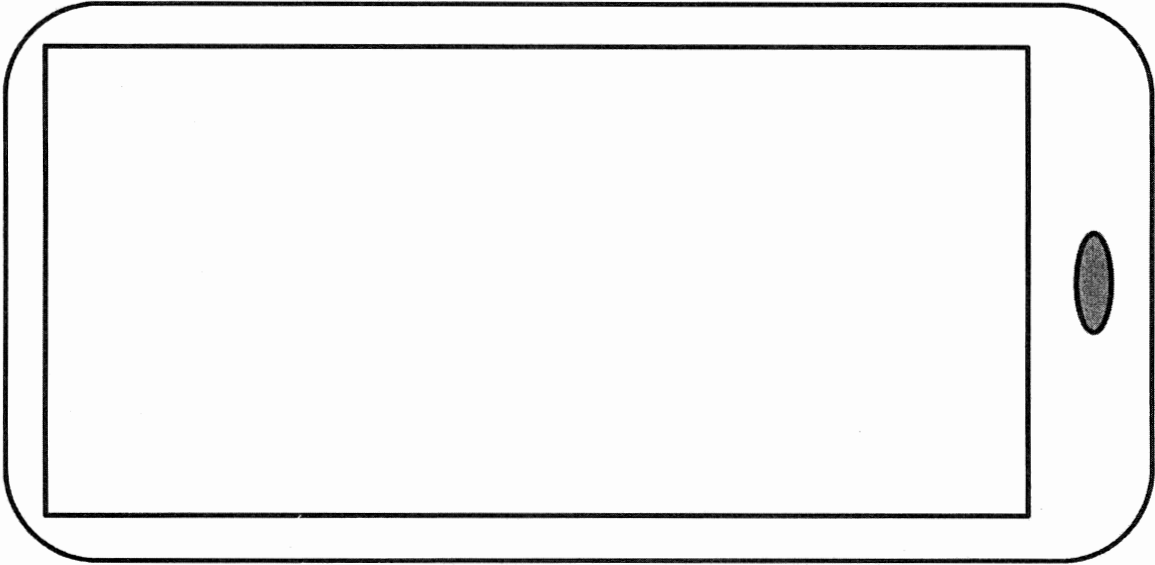

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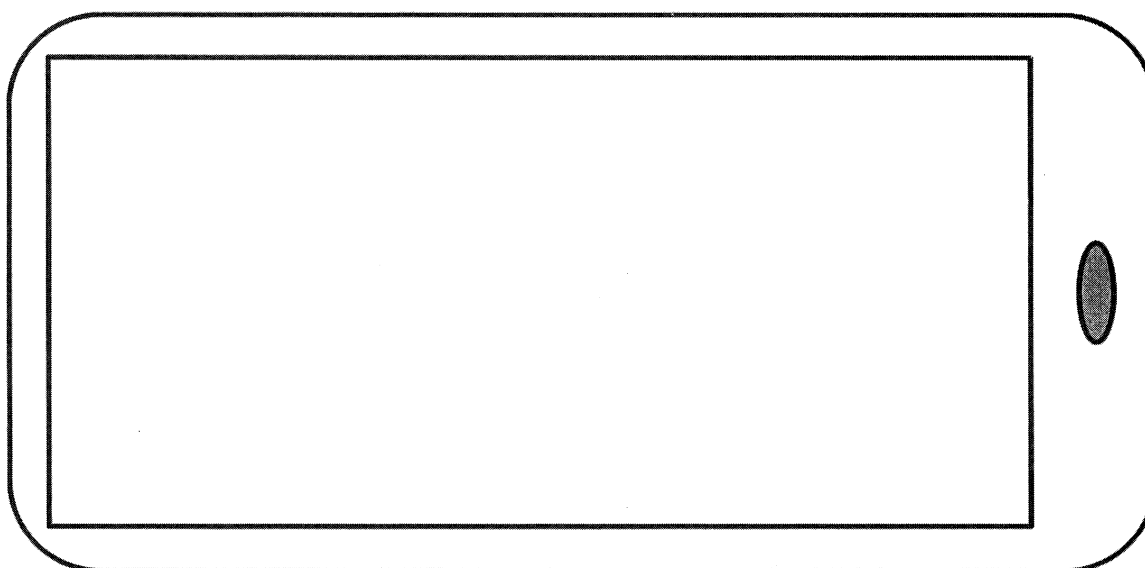
(3 marks)

(e) A web page on the web site displays the selection of seats for a show. Customers have difficulty in selecting seats with a smartphone, as shown in the example below:

Select seats

SCREEN

Weeds of Five   April 21   12:30

Draft the layout design of the mobile version of the web page shown above and describe how to use it.

(3 marks)

Provided by dse.life

4. Eva, the IT manager of a clinic, plans to re-design the web site of the clinic. The first page of the web site is:
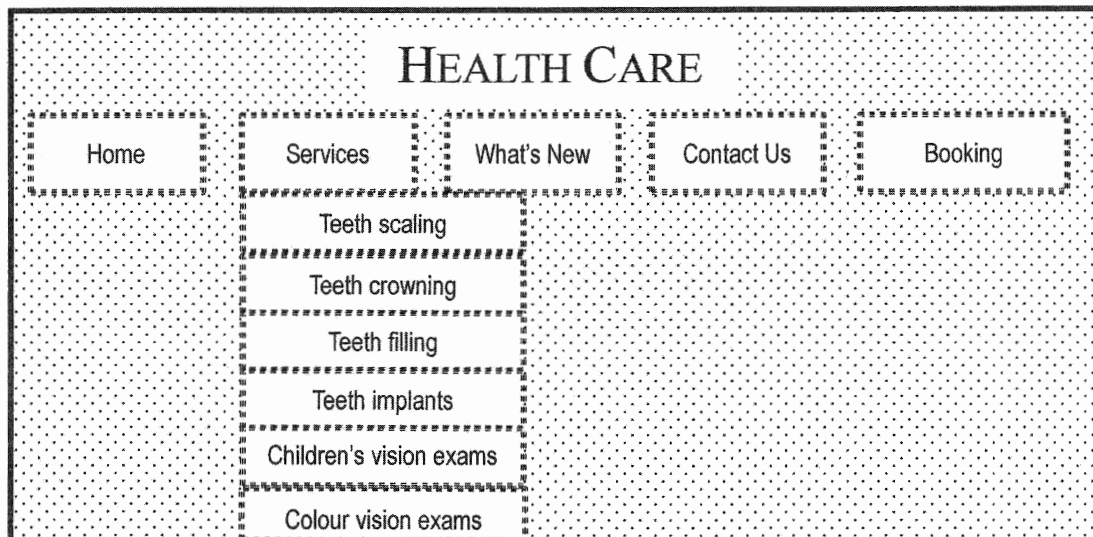
(a) The clinic provides 30 different services. Eva finds that there are too many items under 'Services' and it is difficult to search for certain services.

(i) Describe how to re-design the first page to improve the navigation.

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(ii) Eva uses text instead of images to design the buttons. What is the benefit of this design?

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(4 marks)

(b) (i) Eva plans to add metadata to the web page. Why does Eva have such a plan? Give **two** possible reasons.

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(ii) Eva re-designs the web site such that cookies are included and stored on the client side. Suggest an application of the cookies.

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(4 marks)

(c) Eva uses the following image of a tooth on a web page. In the image, she plans to add hyperlinks connected to web pages about different parts of a tooth.
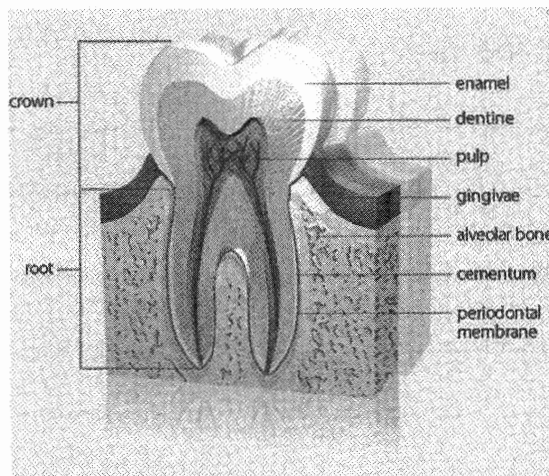
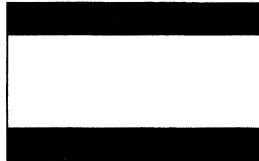Describe how Eva creates an image map for the design above.

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(2 marks)

(d) The company has an uncompressed video about health checks. The specifications of the video are

Frame rate:	25 fps
Colour depth:	24 bits
Frame size:	1280 × 720
File size:	20 GB

(i) Eva plays the video on a TV and finds there are black strips on the top and bottom of the screen, as shown below:

Why are the black strips there?

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(ii) Estimate the length of the video in seconds. Show your calculation.

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(3 marks)

Eva plans to insert a true-false quiz on the web site for quiz-takers to assess their own health conditions. There are 10 true-false questions in the quiz. The number of questions answered with 'true' indicates the health condition of the quiz-takers, as shown below:

Number of questions answered with 'true'	Health condition
7 - 10	Healthy
4 - 6	Need improvement
0 - 3	Unhealthy

(e) Describe a script for the quiz. The script should display the result of the quiz (health condition). You may define suitable variables for the script.

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(4 marks)

END OF PAPER

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