College of Professional and Continuing Education (CPCE), an affiliate of PolyU

THE HONG KONG POLYTECHNIC UNIVERSITY
HONG KONG COMMUNITY COLLEGE

Subject Title	: Introduction to Internet Technology	**Subject Code**	: CCN1016
Session	: Semester Two, 2015/16	**Time**	: 09:30 – 12:30
Date	: 6 May 2016	**Time Allowed**	: 3 Hours
Subject Examiner(s)	: Dr Simon WONG Dr Jack WU		

This question paper has a total of **SIXTEEN** pages (including this covering page).

Instructions to Candidates:

1. There are THREE sections in this paper.
   Section A (50%) – Multiple-choice Questions. Answer ALL questions in this section on the multiple-choice answer sheet provided.
   Section B (30%) – Short Questions. Answer any FIVE out of the SIX questions in the answer book provided. Each question carries 6 marks. If more than FIVE questions are answered, only the first FIVE questions answered will be marked.
   Section C (20%) – Long Questions. Answer any ONE out of the TWO questions in this section in the answer book provided. Each question carries 20 marks. If more than ONE question is answered, only the first ONE question answered will be marked.
2. Candidates are NOT allowed to retain the multiple-choice answer sheet, the answer book and the examination question paper.
3. Show all your work clearly and neatly. Marks will be deducted for untidy work.

Authorised Materials:

	YES	NO
CALCULATOR	[ ]	[✓]
SPECIFICALLY PERMITTED ITEMS	[ ]	[✓]

DO NOT TURN OVER THE PAGE UNTIL YOU ARE TOLD TO DO SO

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Section B (30%) – Short Questions

Answer any FIVE out of the SIX questions in the answer book provided. All questions carry equal marks (6 marks each). If more than FIVE questions are answered, only the first FIVE questions answered will be marked.

Question B1

(a) Briefly describe **EACH** of the following organizations related to the Internet:

(i) ARPA (2 marks)

(ii) Internet2 (2 marks)

(b) State any **TWO** considerations for choosing an ISP. (2 marks)

Question B2

(a) What is the difference between segmenting and subnetting? (2 marks)

(b) Briefly describe **EACH** of the following terms about Internet technology:

(i) VoIP (2 marks)

(ii) Web feed (2 marks)

Question B3

(a) What is a hot spot? (2 marks)

(b) Why is a DNS server needed in the Internet? (2 marks)

(c) How does a metasearch engine work? (2 marks)

Question B4

(a) Briefly describe **EACH** of the following Internet protocols:

(i) FTP (2 marks)

(ii) Telnet (2 marks)

(b) What is the difference between a bridge and a switch in computer networking? (2 marks)

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Question B5

(a) What is phishing? (2 marks)

(b) Briefly describe **EACH** of the following transmission media:

(i) NFC (2 marks)

(ii) Bluetooth (2 marks)

Question B6

(a) What is the difference between freeware and shareware? (2 marks)

(b) Briefly describe **EACH** of the following terms related to the Internet:

(i) Microblogging (2 marks)

(ii) NNTP (2 marks)

- End of Section B -

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Section C (20%) – Long Questions

Answer any ONE out of the TWO questions in this section in the answer book provided. All questions carry equal marks (20 marks each). If more than ONE question is answered, only the first ONE question answered will be marked.

Question C1

Suppose you are an information technology (IT) consultant for Hon Wah Clinic. As an IT consultant, you are requested to provide IT solutions to the clinic. As advised by you, an Apache web server has been set up in the clinic. The Apache web server is installed with PHP and configured that the web pages and PHP files are located at C:\apache\htdocs.

(a) Which configuration file in Apache web server is used to configure the location for the web pages and PHP files? (1 mark)

(b) How do you set in the configuration file in Apache web server to configure that the web pages and PHP files are located at C:\apache\htdocs? (2 marks)

(c) You are given with the design of a web page in Figure 2 that allows a user to input the fields with the formats and variable names shown in Table 1.

Once the button with the label "Add" is pressed, this web page will forward the user input request by POST method to a PHP program called *InsPatient.php* at the URL http://www.honwah.com.hk:8080. If the button with the label "Clear" is pressed, the data on the web page will be reset to its initial values.

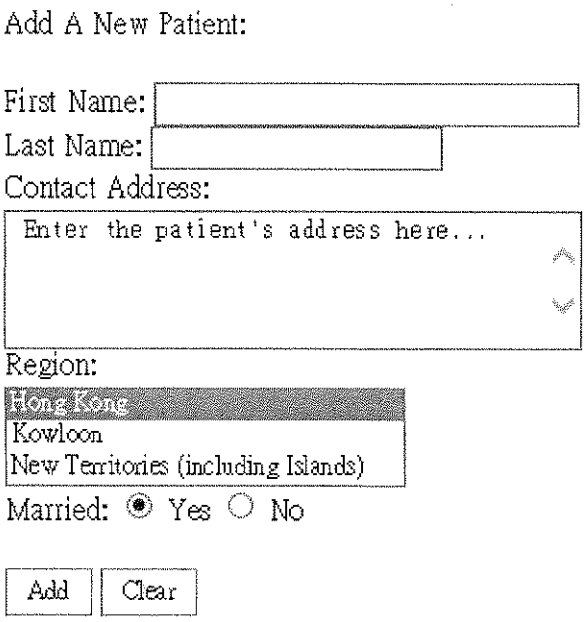

Figure 2: HTML Form for Adding a New Patient

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Field	Input Format	Variable Name used in HTML
First name	Text input with 30 characters	*fname*
Last name	Text input with 20 characters	*sname*
Contact address	Text area input with 4 rows and 40 characters in each row. The default text "Enter the patient's address here..." displays when the page appears.	*address*
Region	Select from a list of the regions Hong Kong, Kowloon and New Territories (including Islands). The default value "Hong Kong" is selected when the page appears. Each region is left-aligned. When the "Add" button is pressed, the following will happen: If Hong Kong is selected, then the value *hk* will be assigned to the variable region. If Kowloon is selected, then the value *kln* will be assigned to the variable region. If New Territories (including Islands) is selected, then the value *nt* will be assigned to the variable region.	*region*
Married	Radio buttons for the value of *yes* or *no*. The default value of *yes* is shown when the page appears.	*married*

Table 1: Input Formats and Variable Names for the Fields used in the HTML File

Based on the above information, use HTML to design the web page in Figure 2. (12 marks)

(d) In an HTML form, the variable *height* and the variable *weight* are used to pass a patient's height in meters (m) and weight in kilograms (kg) respectively to a PHP program in a web server. The PHP program will compute a body mass index (*bmi*) as follows:

$$bmi = \frac{w}{h^2}$$

where w is the weight in kg and h is the height in m.

Use an if...else structure to write this PHP program which accepts the values of the variables *height* and *weight* in the HTML form by POST method, computes the *bmi* and if the computed *bmi* is larger than 25, the PHP program displays the message "Overweight!", otherwise, the PHP program displays the message "Not overweight.". (5 marks)

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Question C2

Thompson Laboratory adopts Apache web server and PHP program for data input of its laboratories. Suppose you are a web master for Thompson Laboratory and you are required to provide solutions to the following problems:

(a) How do you set the port number to 8088 in Apache web server? (3 marks)

(b) You are given with the design of a web page in Figure 3 that displays a table which contains the information of the laboratories in Thompson Laboratory. The title of the table is "Laboratories", the top row with the field names "Room No.", "Type" and "No. of Seats" indicates the column headings and the width of the table's border is 2 pixels. When this web page appears, the background sound file called bit8.wav plays. This web page will forward a hidden field called *location* with the value "HHB" and another hidden field called *quarter* with the value "Spring2016" by POST method to a PHP program called *InsLab.php* at the URL http://www.thompson.com.hk:8088 when the button with the label "Next" is pressed.

Thompson Laboratory

Laboratories

Room No.	Type	No. of Seats
FH318	Biomedical	30
LD6730	Chemical	10
XY39	IT	25

Next

Figure 3: Thompson Laboratory Web Page

Based on the above information, use HTML to design the web page in Figure 3. (12 marks)

(c) An HTML form with the variable *celcius* is used for a user to enter a Celcius degree detected in a laboratory and pass the entered Celcius degree value by GET method to a PHP program in a web server installed in North America. In North America, the temperature unit is Fahrenheit. In this regard, that PHP program will convert the entered Celcius degree to Fahrenheit degree as follows:

$$f = c \times \frac{9}{5} + 32$$

where f is a degree in Fahrenheit and c is a degree in Celcius. Use an if...else structure to write this PHP program which displays the message "Too cold!" if the Fahrenheit degree value is below 32; otherwise, the PHP program displays the message "Not too cold!". (5 marks)

- End of Section C -

- END OF PAPER -