

THE HONG KONG POLYTECHNIC UNIVERSITY
HONG KONG COMMUNITY COLLEGE

Subject Title : Introduction to Internet Technology Session : Semester Two, 2017/18 Date : 10 May 2018 Subject Examiner(s) : Mr Yiu-chung CHU	Subject Code : CCN1016 Time : 09:30 – 12:30 Time Allowed : 3 Hours
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This question paper has a total of **TWELVE** pages (including this covering page).

Instructions to Candidates:

1. There are THREE sections in this paper.
 - Section A (30%) – Multiple-choice Questions. Answer ALL questions in this section on the multiple-choice answer sheet provided. Each question carries 1 mark. Choose the BEST option for each question.
 - Section B (40%) – Short Questions. Answer any FIVE out of the SIX questions in the answer book provided. Each question carries 8 marks. If you answer more than five questions, only the first five attempted questions will be marked. Indicate in your answer book clearly which five questions you are attempting.
 - Section C (30%) – Long Questions. Answer ALL questions in this section in the answer book provided. Each question carries 15 marks.
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.
4. Electronic calculators, including programmable calculators, may be used provided that the calculators are battery powered, silent in operation, with neither printout nor graphic / word display facilities and do not use dot-matrix technology in the main display. All programmes stored in the calculator should have been cleared. Other electronic devices with graphic / word-display facilities (such as databank watches) are not permitted.

Authorised Materials:

	YES	NO
CALCULATOR (All programmes stored should be cleared.)	[✓]	[]
SPECIFICALLY PERMITTED ITEMS	[]	[✓]

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



Section B (40%) – Short Questions

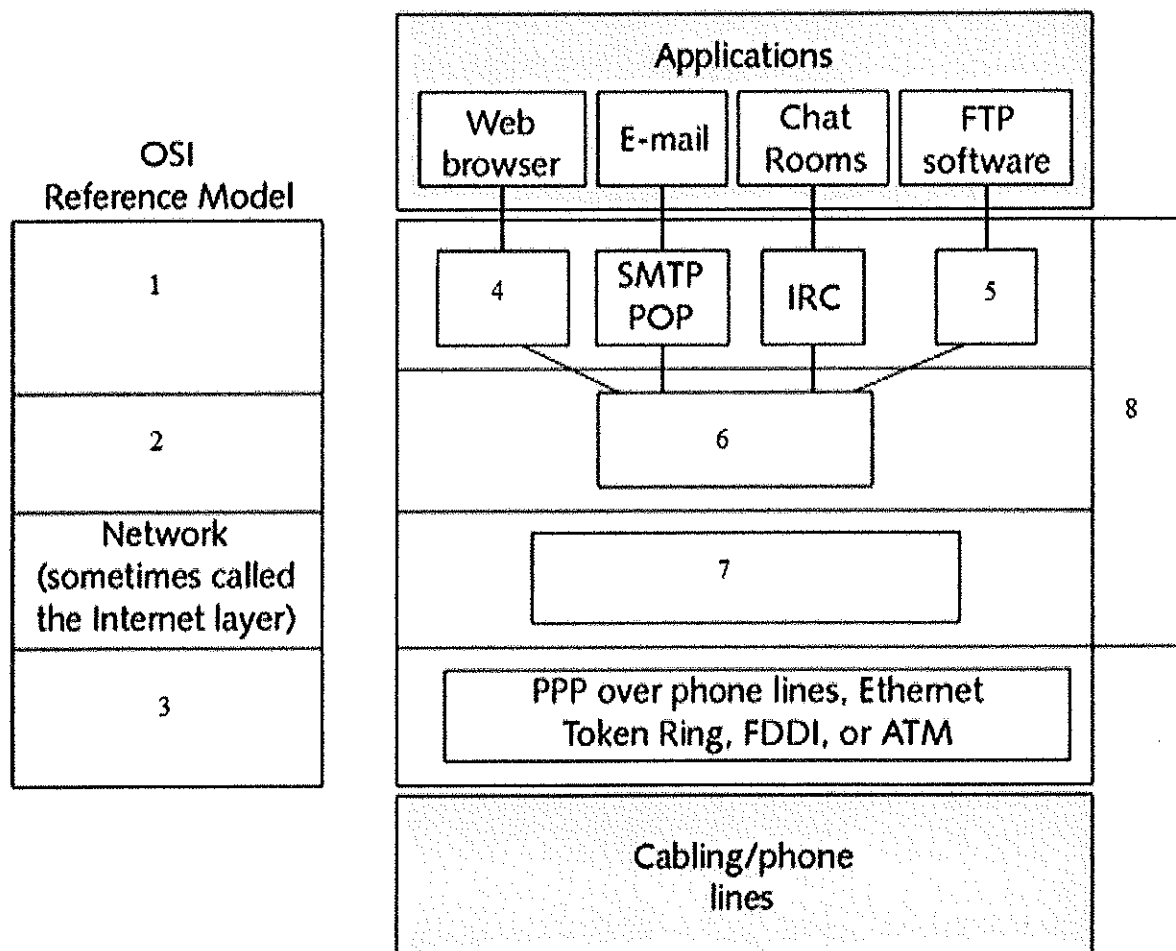
Answer any **FIVE** out of the **SIX** questions in the answer book provided. Each question carries 8 marks. If you answer more than five questions, only the first five attempted questions will be marked. Indicate in your answer book clearly which five questions you are attempting.

Question B1

Use a table to show the differences between circuit switching and packet switching. (8 marks)

Question B2

Fill in 1-8 of the following diagram. (8 marks)



Question B3

Philip would like to know more about the current TCP/IP network configuration values his PC is using. John typed a command in the command prompt using a Windows environment and part of the result is shown below:

Ethernet adapter Local Area Connection:

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Connection-specific DNS Suffix . :
Physical Address. . . . . : 00-30-86-10-24-32
DHCP Enabled. . . . . : Yes
Autoconfiguration Enabled . . . : Yes
IPv4 Address. . . . . : 10.123.234.121
Subnet Mask . . . . . : 255.255.255.192
Default Gateway . . . . . : 10.123.234.2
DNS Servers . . . . . : 10.123.234.15
                        10.123.234.16

```

- (a) What is the MAC address of the machine displayed above? Which OSI layer is used for the MAC address to communicate on the same network? (2 marks)
- (b) Calculate the possible number of subnets. (2 marks)
- (c) Compute the number of useable hosts in each subnet. (2 marks)
- (d) Describe the function of a default gateway and an alternate gateway separately. (2 marks)

Question B4

- (a) Philip and John are discussing about network security, define flooding regarding about network security. (2 marks)
- (b) They have talked about network protection also, regarding about network protection, briefly describe **THREE** properties for each of the following protection strategies:
 - (i) Encryption (3 marks)
 - (ii) SSL (3 marks)



Question B5

(a) Briefly describe **FOUR** characteristics of news-oriented websites. (4 marks)

(b) And briefly describe the following **TWO** terms

(i) Brick-and-mortar (2 marks)

(ii) Brick-and-click (2 marks)

Question B6

Briefly describe **FOUR** B2B web hosting services provided for web and database server storage and server administration. (8 marks)

- End of Section B -



Section C (30%) – Long Questions

Answer **ALL** questions in this section in the answer book provided. Each question carries 15 marks.

Question C1

Write an HTML file which contains an HTML form using the following format:

Form:

- title is set to **Final Question C1**
- action is set to **http://localhost/C1.php**
- method is set to **post**

Input elements:

- name for Name textbox with 40 columns: **name**
- name for Password textbox: **password**
- name for Sports checkbox: **sport**
- name for Gender radio buttons: **gender**
- name for Comments with 4 rows and 40 columns: **comment**
- name for Fruit drop-down list: **fruit**

The HTML form is used to collect information as shown in the following figure:

Final Question C1

Name:

Password:

What is your favourite sport(s)?

☐ Football

☒ Baseball

☐ Basketball

What is your gender?

☒ Male

☐ Female

Comments:

Default text here...

Your favourite fruit:

Apple

Banana

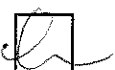
Pineapple

Orange

Reset the form

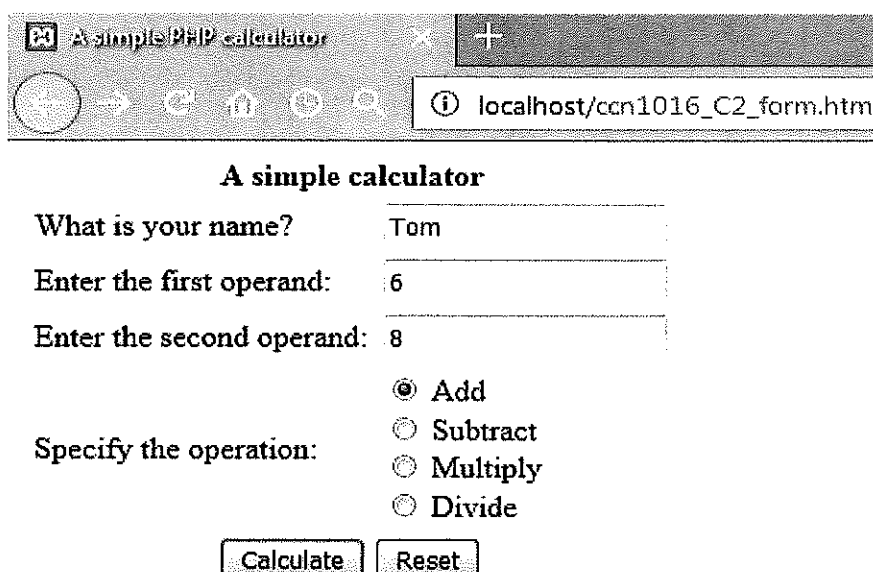
Execute

(15 marks)



Question C2

An HTML form similar to the one below is saved as “CCN1016_C2_form.html” in the root directory of the Web server.



A simple calculator

What is your name?

Enter the first operand:

Enter the second operand:

Specify the operation:

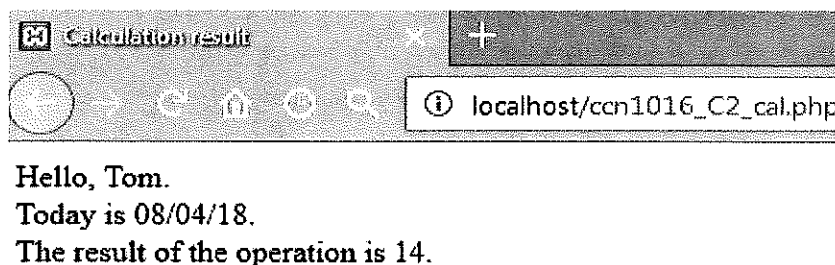
☒ Add
☐ Subtract
☐ Multiply
☐ Divide

Note the following about the form:

- Use the POST method in the form
- When the user clicks the “Calculate” button, the form is sent to a dynamic HTML page called “CCN1016_C2_cal.php”. This PHP file will be put in the root directory of your Web server. You will create this file explained below.
- Use suitable “name” for the input elements in “CCN1016_C2_form.html”. These names will be referenced again in the PHP file below.

Write a PHP script called “CCN1016_C2_cal.php”. The page should look similar to the one below (after the user inputs in the HTML form). It displays the following information:

- A greeting message (in the first line)
- The date of today (in the second line)
- The result of the calculation (in the third line)



Calculation result

Hello, Tom.

Today is 08/04/18.

The result of the operation is 14.

NOTE: For this question, you just have to write the PHP script.

(15 marks)

- End of Section C -

- END OF PAPER -

