

Final Written Exam (Open BOOK) _Sheet B

20 : 10—21 : 40, Dec-25-2018

PC Training Classroom, 1F, Information Building

- You could write down your answers in any order in the answer book, with the problem numbers marked clearly.
- **The exam is composed of three problem sets (and 16 problems) in 4 pages .**
 - ◆ Score distribution: 30-36-34 (total 100 points)

Part 1 : Single/multiple Choice (30% - three points for each problem)

1. []. Which of the following would run on VirtualBox for Windows?
A. FreeBSD B. Apple iOS C. Ubuntu D. Windows XP
2. []. When a virtual machine is not running, how is it stored?
A. Firmware B. RAM drive C. Optical disc D. Files
3. [] On a **Lubuntu** system, which of these directory trees are the least likely to be backed up or restored?
A. /home B. /proc C. /tmp D. /usr E. /var
4. **Lubuntu** has a regular update schedule. How frequently does Lubuntu update?
A. monthly B. quarterly C. Every six monthly D. annually
5. [] It is used to confirm that DNS name resolution is functioning. In a DHCP server configuration, what is/are mandatory(必要性):
A. Default gateway B. DNS server address
C. IP pool (starting and ending IP address) D. Subnet mask
6. [] Select the the protocol(s) to support the sending and receiving of e-mail.
A.SNMP B.SMTP C.POP3 D.IMAP
7. [] The command, "**ping 127.0.0.1**", is run on a Lubuntu system. In the following, find out the **correct** statement(s):
A. To determine whether you can reach the default gateway (router).
B. To verify that the local computer is correctly added to the network.
C. To see if TCP/IP is correctly installed and configured on your computer.
8. [] Which are the correct tags to organize data with tables in HTML files?
[1].<table><tr><tt> [2].<table><head><tfoot>
[3].<thead><body><tr> [4].<table><tr><td>
9. [] In the following, which could be used **to represent bold text** in HTML?
[1].<bold>text</bold> [2].text
[3].Both of the two above [4].Neither of the above
10. [] 底下有關 CSS 樣式表使用, 哪些是正確的?

- A. 可嵌入在<head>元素中
 B. 不可嵌入在<body>元素中
 C. 將樣式表(CSS)放在外部檔案, 並使用 <link> 元素連結到 HTML 文件中
 D. 使用 HTML 元素的 style 屬性指定樣式表

Part 2 – Short-answer Problems (簡答題) [36%]

11. [8%] 請以本課程的教學系統環境為例, 加以說明:
- A. VirtualBox 的 [NAT 模式] 與[橋接模式], 主要差異?
- Hint:請以 Host(底層主機, Windows/macOS), VirtualBox, VM(虛擬機, Ubuntu), 加以舉(圖)例說明
12. [10%] 請以底下 Packet Tracer 實作題(P.16)的圖例,
- A. [4%, 3%, 3%] 簡單(舉例)描述 [router], [switch], [hub] 三者功能的基本差異(每項設備最高得 2 分)。
13. [8%] 瀏覽器外掛(擴充)程式 (以 Firefox 或 Google Chrome 舉例)
- A. 舉一個實例情境, 跟你的課業學習有關的外掛程式 [4%]
- B. 舉一個實例情境, 是你個人喜愛的外掛程式 [4%]
- 備註: 盡量具體描述, 最好有截圖, 來輔助說明
14. [10%] About your Term Project and the course:
- A. In your opinion, what is the **hardest part** of your term project? What is the **most interesting part** of your term project? [6%]
- HINT: Contribution/lessons learned
- B. Name at least one that you think is/are interesting and missing in this course and you suggest adding it/them in a future class. [4%]

Part 3[34%] – 實作相關題 (請上傳相關實作檔案到 e3 網站)

15. [10%] Please accomplish the required HTML/CSS file (i.e., template shown).
 請根據底下的描述, 完成本題的網頁
- 說明 1: Specification (規格內容)
 - A. Heading specification
 - **HTML/CSS Test** (h1, color: **red**)
 - **About Me** (h2, color: **blue**), **My Course Table** (h2, color: **blue**)
 - Others (using default, 使用預設值)
 - B. **Background color**: select and set the background color of your HTML file, by the following rule (學號尾數除以 3, 得餘數):
 - 0 (i.e., 尾數 0,3,6,9) : lightpink (淺粉紅色)
 - 1 (i.e., 尾數 1,4,7) : skyblue (天藍色; 淺藍色)
 - 2 (i.e., 尾數 2,5,8) : lightgreen (淺綠色)
 - C. **大頭貼(JPG/PNG/GIF)**, 排列在第一個 table (僅一列) 的 **第二個欄位**
 - D. **表格顏色**
 - Table head (如果有), 綠色
 - Table data (白底黑字)
 - 說明 2: 將底下範例圖中資訊(以老師舉例), 改成你個人的資訊.
 - 說明 3 (課程列表): 請自行舉例課程名稱(取 2 個).

HTML/CSS Test (Final Exam)

1. About Me (*2)

- 姓名: 陳昌盛
- 聯絡資訊:
 - E-mail: <cschen@mail.nctu.edu.tw>
 - 系所網頁: <http://web.it.nctu.edu.tw>



2. My Course Table (*3)

課程名稱	學分數	上課地點與時間
Internet Technology and Application	3	<ul style="list-style-type: none"> • Information Building • 2IJK
Database Management	3	<ul style="list-style-type: none"> • Engineering Building C • 4CD,5B

Figure P15: Sample Required HTML/CSS File

16. [24%] 請下載, e3 網站的 PT 範本檔(未完成), 根據底下的網路敘述, 並參照 Figure P16 完成本題要求(i.e., 將尚未完成部分補上, 並修正可能的錯誤).

- 評分: 設定部分_14%, 測試部分_10% (包含截圖)
- 上傳PKT檔案, 以及測試部分的截圖(Word/PDF)

具體需求說明如下:

- (1). Figure P16中特定網段 (x1-x4) 的計算方式
 - 每位同學取學號的最末位為Y (Y= 0, 1, ..., 9)
 - **x1=Y+10, x2=Y+20, x3=Y+30, x4=Y+40**
- (2). 所有router 的routing 請使用RIP 協定
 - 每個範例網段的netmask 都是24 bit (255.255.255.0)
 - Router IP 指定(參考上圖, 各別配置)
- (3). 所有網段中的 **DHCP server**
 - 使用DNS server(192.168.x2.1), 子網路遮罩netmask (255.255.255.0)
 - IP_range: 192.168.Z.[101-150], Z 代表以下網段(x1, x3, x4)
- (4). Figure P16中各網段的具體描述
 - Subnet 1:192.168.x1.0 (Router_A), 有DHCP_Server 192.168.x1.1
 - Subnet 2:192.168.x2.0 (Router_B), 有**DNS_server** 192.168.x2.1
 - Subnet 3:192.168.x3.0 (Router_C), 有DHCP_Server 192.168.x3.1 + **Wireless LAN (智慧手機), SSID= NCTU_Wireless**
 - Subnet 4:192.168.x4.0 (Router_C), 有DHCP_Server:192.168.x4.1
 - Subnet 5:192.168.100.0 (Router_A, Router_B) - **Serial Ports**
 - Subnet 6:192.168.200.0 (RouterB, Router_C) - **Ethernet ports**
- (4). VLAN 設定, 在192.168.x3.0/24 & 192.168.x4.0/24 這兩個網段
 - **Vlan 3** (refers to subnet x3) -- Port: Fa 0/23(Sw_C), Gig0/1(Router_C)

- Vlan3 適用: port 0-10 + port 23
 - Vlan 4 (refers to **subnet x4**) – **Ports:** Fa0/24(Sw_C), Gig0/2 (Router_C)
 - Vlan4 適用: port 11-20 + port 24
 - 其他未指定 (port 21, 22 仍然是 VLAN=1)
- (5) 根據底下要求, 建立一個DNS server 的資料

SOA RR 對應資料

- Primary DNS server: **dns.dzY.nctu.edu.tw**
- Mbox: hostmaster@nctu.edu.tw
- Minimum TTL: 3600
- Refresh time: 10800
- Retry time: 1800
- Expire time: 86400

NS RR: nctu.edu.tw 對應資料

- Server_name: **dns.dzY.nctu.edu.tw**

A RR: 對應資料

- Dns. **dzY.nctu.edu.tw** → 192.168. **x2.1**
- X1dhcp. dzY.nctu.edu.tw → 192.168. x1.1
- X3dhcp. dzY.nctu.edu.tw → 192.168. x3.1
- x4dhcp. dzY.nctu.edu.tw → 192.168. x4.1

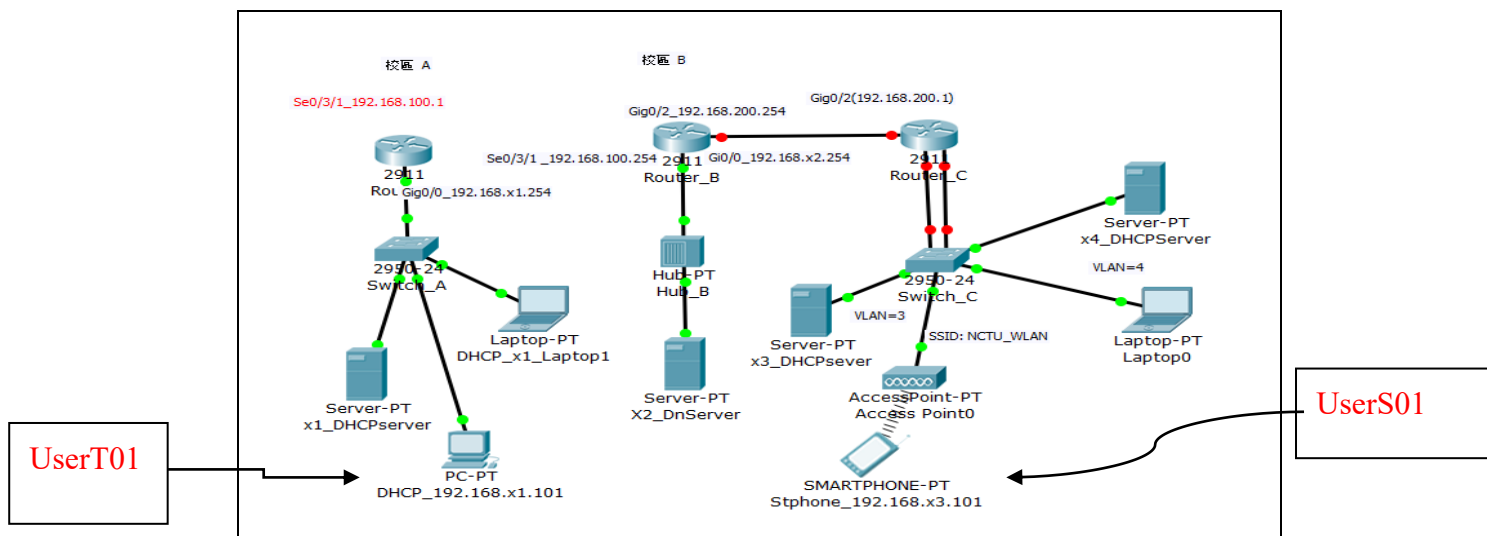


Figure P16. The topology of the requirement network

6.測試要求[10%=(3%, 3%, 4%)] Ping/Traceroute/Web_connection Test

- (1). [UserS01]透過DNS, 從x3網段的無線智慧手機(192.168. x3.101) ping 上述的DNS server (使用domain_name)
- (2). [UserT01]從192.168. x1.101 tracert上述 DnsServer_192.168. x2.1之IP
- (3). [UserT01]: 從192.168. x1.101使用 browser 連接192.168. x4.1 的 web_server (請在web_server 的 index.html, 適當位置, 打上 192.168. x4.1 的 IP address 資訊)