



UNIVERSITI TUN HUSSEIN ONN MALAYSIA

**FINAL EXAMINATION
(ONLINE)
SEMESTER II
SESSION 2019/2020**

COURSE NAME : FUNDAMENTALS OF WEB TECHNOLOGY
COURSE CODE : BIW 10103
PROGRAMME CODE : BIW
EXAMINATION DATE : JULY 2020
DURATION : 2 HOURS
INSTRUCTION : 1. ANSWER **ALL** QUESTIONS
2. PLEASE MAKE SURE TO CLICK "SAVE ANSWER" BUTTON FOR SUBJECTIVE QUESTIONS. OBJECTIVE QUESTIONS ARE SAVED AUTOMATICALLY.

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THIS QUESTION PAPER CONSISTS OF **SIX (6)** PAGES

Q1 An Original Equipment Manufacturer(OEM) is considering to migrate its software solutions to a cloud environment in order to improve the IT and business operating efficiency. The OEM is part of a very competitive industry where strict data privacy issues are key success factors for survival of the company.

Which type of cloud deployment model would you recommend to them? State the reason for your answer.

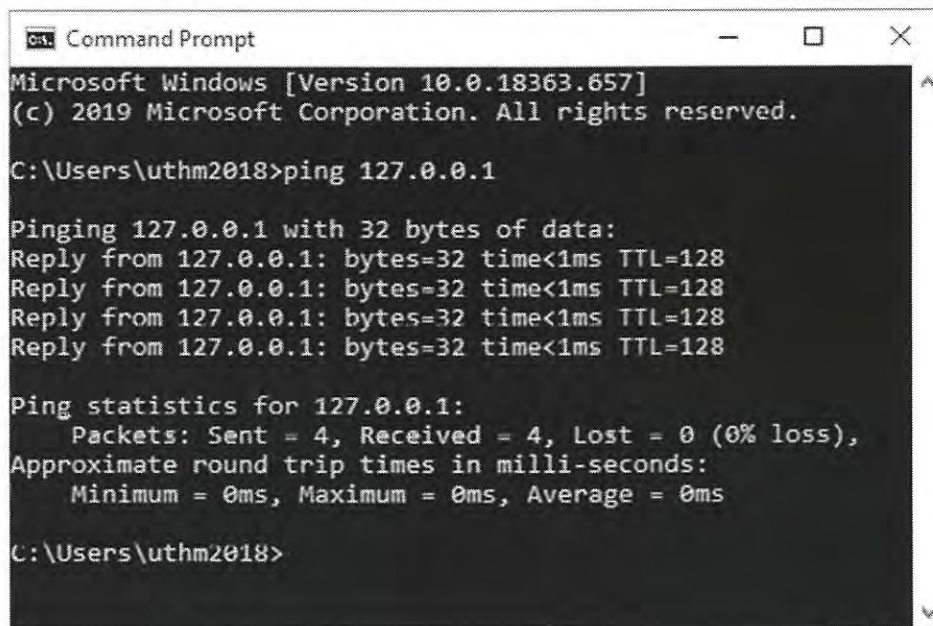
(2 marks)

Q2 The OEM currently experiences 7 % to 10% utilization of its development and test computing resources. The company would like to consolidate to reduce the number of total resources in their data center and decrease energy costs.

Which feature of cloud computing allows resource consolidation? Suggest a service to allow users to run existing online applications.

(2 marks)

Q3 Based on **Figure Q3**, identify the process and analyse the results.



```
cmd Command Prompt
Microsoft Windows [Version 10.0.18363.657]
(c) 2019 Microsoft Corporation. All rights reserved.

C:\Users\uthm2018>ping 127.0.0.1

Pinging 127.0.0.1 with 32 bytes of data:
Reply from 127.0.0.1: bytes=32 time<1ms TTL=128
Reply from 127.0.0.1: bytes=32 time<1ms TTL=128
Reply from 127.0.0.1: bytes=32 time<1ms TTL=128
Reply from 127.0.0.1: bytes=32 time<1ms TTL=128

Ping statistics for 127.0.0.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\Users\uthm2018>
```

Figure Q3

(3 marks)

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- Q4** Based on the following given domain name, outline in detail the **SIX (6)** steps on how Domain Name System (DNS) server works when enter key is hit to the browser.

`http://www.amazon.com`

(6 marks)

- Q5** (a) Provide the shorten IPv6 addresses of following:

(i) `FF02:0000:0000:0000:0000:0000:0001:0003`

(ii) `0000:0000:0000:0000:0000:FFFF:45AB:ACEA`

(iii) `2001:0DB8:0FC5:007B:AB70:0210:0000:00BB`

(iv) `2001:cdba:0000:0000:0000:0000:3257:9652`

(4 marks)

- (b) Explain how secure communication is achieved between the client and server using HTTPS.

(3 marks)

- Q6** (a) How to prevent unauthorized users from accessing sensitive data?

(4 marks)

- (b) Suggest any **THREE (3)** steps on how to secure a web application.

(3 marks)

- Q7** Based on **Figure Q7** answer **Q7(a)-Q7(d)**.



The image shows a login interface for UTHM-WiFi. At the top, it says "UTHM-WiFi" in a large, bold font. Below that, it says "* Welcome to UTHM WiFi *". There are two input fields: "User ID" with the value "GE150085" and "Password" with the value "*****". Below the password field, there are two radio buttons: "Staff" (which is selected) and "Student". At the bottom left, there is a "Login" button.

Figure Q7

- (a) Outline the full HTML codes to generate the login page (6 marks)
- (b) Using `UserID = GR150085` and `password = MN1272014`, provide the IITTP/1.1 request message structure send by the IITTP client to the server. (5 marks)
- (c) Explain on how to secure the transaction after the LOGIN button is clicked. (3 marks)
- (d) How to identify the secure transaction from the URL? (2 marks)

Q8 (a) Based on **Figure Q8(a)**, outline the full HTML codes to generate a simple calculator.

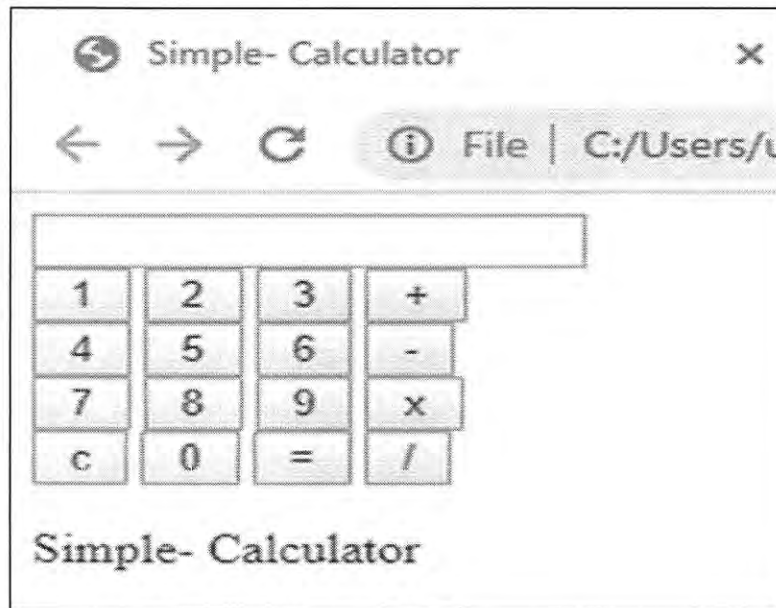


Figure Q8(a)

(6 marks)

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- (b) Based on **Figure Q8(b)**, outline the full HTML codes to generate a web page as in the given format. Use the following URL.

<http://www.uthm.edu.my>
<http://www.ump.my>
<http://www.utem.my>
<http://www.unimap.edu.my>

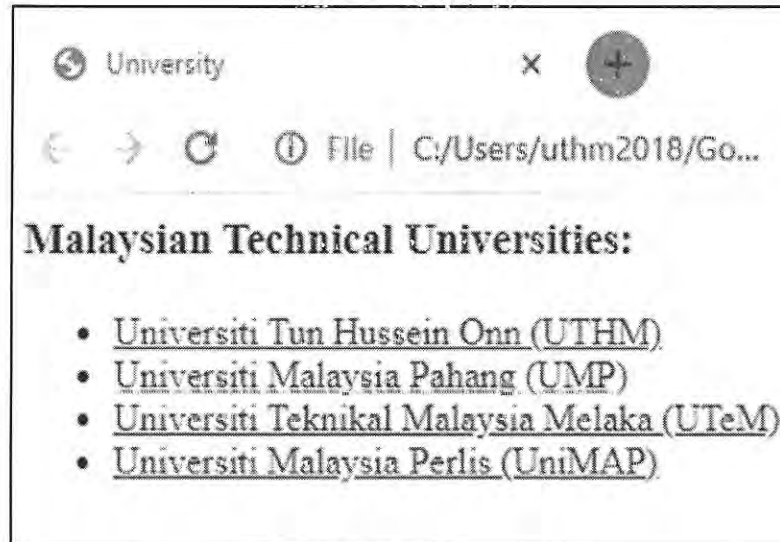


Figure Q8(b)

(5 marks)

- (c) Based on **Figure Q8(c)**, outline the full HTML codes to generate a webpage as in the given format.

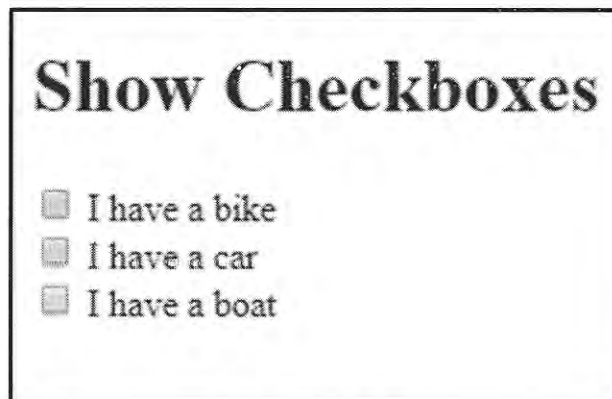


Figure Q8(c)

(4 marks)

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Q9 Based on Figure Q9, outline the full HTML codes to generate a webpage as in the given format. The image file is fsktm.png and located in resources folder with height=100 and width=260.

The screenshot shows a web browser window with the following content:

- Browser title: Login
- Address bar: File | C:/Users/uthm2018/Go...
- Logo: FSKTM (Fakulti Sains Komputer & Teknologi Multimedia)
- Section: Registration Form
- Text: SEMESTER II 2019/2020
- Form fields:
 - Student Name :
 - Student Id:
 - Choose a programme: (dropdown menu with options: BIP, BIP, B15, B1W, DIM)
 - Which year:
 - Year 1
 - Year 2
 - Year 3
 - Year 4
 - Subject registered:
 - BIC101
 - BIC102
 - BIC103
 - BIC104
- Buttons:

Figure Q9

(12 marks)

- END OF QUESTIONS -

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