

266-313

DUBLIN INSTITUTE OF TECHNOLOGY
KEVIN STREET, DUBLIN 8

Diploma in Computer Science

Year 3

Winter Examination 2001

Advanced Web Development

Mr. C. O'Leary

Dr. M. Golden

Mr. K. Kenny

Attempt **FOUR** Questions.

All questions carry equal marks.

1.

(a)

- (i) What is an Internet host?
- (ii) What are the two ways by which an Internet host can be identified?
- (iii) What is the name of the service used to map between the two?

(1+2+2 marks)

(5 marks)

(b) Explain using a diagram what is meant by a Client Server architecture.

(6 marks)

(c) The Internet and the World Wide Web are often considered to be the same thing. Explain clearly why this is incorrect, by outlining what exactly the Internet is, and what the World Wide Web is.

(5 marks)

(d) List three Internet Services and give the use and associated protocol for each. Explain how they fit into the Client Server model

(3+3+3 marks)

(9 marks)

2.

(a) Explain each of the following

- (i) Hypertext
- (ii) HTML
- (iii) Cascading Stylesheets

(1+1+1 marks)

(3 marks)

(b) What is meant by the *Document Object Model*? How is it useful?

(4 marks)

(c) Construct a DOM tree for the code below.

(6 marks)

```
<html>
  <head>
    <title>
      Exam
    </title>
  </head>
  <body>
    <h1>
      2001 Exam
    </h1>
    <p>
      Question 1:
      What is HTML?
    </p>
    <table>
      <tr>
        <td>
          Table
        </td>
      </tr>
    </table>
  </body>
</html>
```

(condt. Overleaf)

(d)

- (i) What is meant by a URL?
- (ii) What are the (four) different parts of a URL and what is the function of each?
- (iii) What are the defaults for each part of the URL should they be omitted?
- (iv) What is a URN?
- (v) What is a URI?

(2+6+2+1+1 marks)

(12 marks)

3

(a)

- (i) What is HTTP?
- (ii) How does HTTP use TCP to make a request? Use a diagram.

(2+4 marks)

(6 marks)

(b) Describe the different components of an HTTP request.

(5 marks)

(c) Describe the different components of an HTTP response.

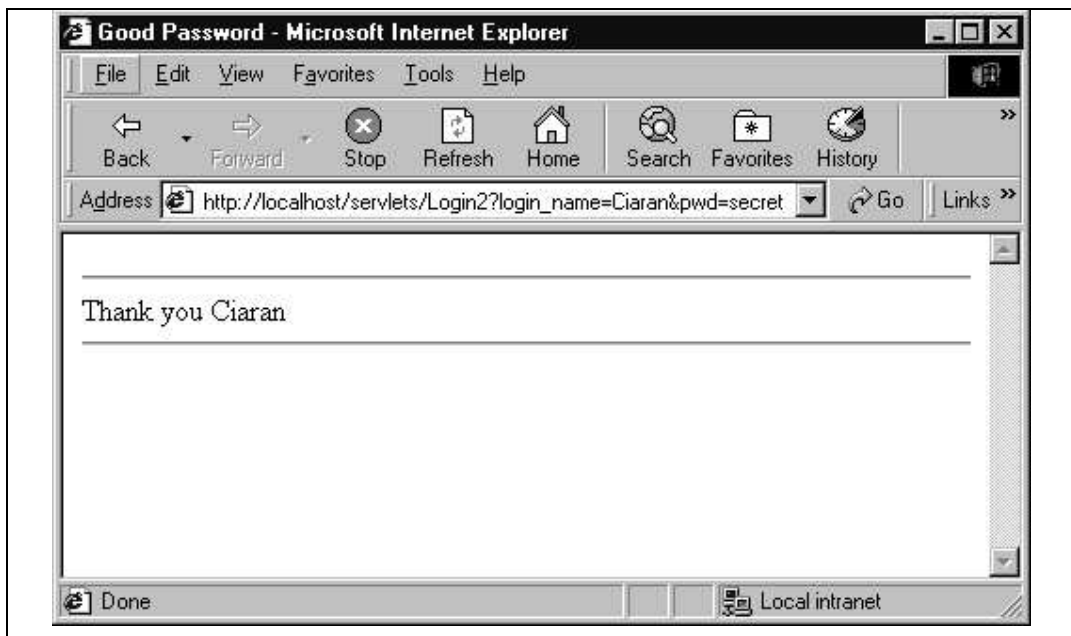
(5 marks)

(contd. Overleaf)

- (d)
- (i) GET and POST are the two most common types of HTTP request types. When is one usually preferred over the other?
 - (ii) When submitting a form in a HTML page how do GET and POST handle the user data differently?
 - (iii) The screen below shows the results sent back by a Java Servlet after a form with two parameters was submitted to it. Was the form submitted using a GET or a POST? How can you tell?

(3+3+3 marks)

(9 marks)



4

(a) Using a diagram describe what is meant by a three-tier architecture?

(2 marks)

(b)

- (i) JavaScript is a **client side scripting** technology. Java Servlets perform **processing on the server side**. What are the differences between the two types of processing?
- (ii) When might one type of processing be preferred to the other? Give example functions for each

(3+3 marks)

(6 marks)

(c)

- (i) ASP is an example of scripting on the server side. Explain what ASP is.
- (ii) How is it processed? How is scripting code distinguished from HTML code within an ASP file.

(2+3 marks)

(5 marks)

(d)

- (i) JSP is another server side technology. Explain what JSP is?
- (ii) When the first request is made to a JSP what are the steps that take place? Explain with reference to the relationship between JSP and Java Servlets. What is different the second time a request takes place.
- (iii) How does the processing of JSP differ from the processing of ASP

(2+5+2 marks)

(9 marks)

(e) Cold Fusion is an example of a server side technology that is particularly useful for a certain function. What is this function? How does Cold Fusion make this task easier?

(3 marks)

5

(a) Explain what is meant by e-commerce. Refer to its benefits and downfalls.

(4 marks)

(b)

(i) What is meant by the term cryptography?

(ii) What is symmetric cryptography?

(iii) What is asymmetric cryptography?

(iv) Outline the process involved in each by clearly explaining the roles played by the sender, receiver, text and keys.

(2+3+3+4 marks)

(12 marks)

(c)

(i) SET and SSL are two means used to perform secure transactions electronically. Explain the differences between the two.

(j) Clearly outline the process involved in the operation of **ONE** of SET and SSL.

(3+6 marks)

(9 marks)