

PART B: answer TWO questions from this section.

Question 4

- (a) (i) Draw a diagram of the TCP/IP (or Internet) model of the networking protocol stack, and briefly describe the functions assigned to each layer of the model.
- (ii) Which layers do the following protocols belong to? Briefly state the functions defined by each protocol, for example *SMTP: Simple Mail Transfer Protocol, application layer protocol for sending email to remote servers.*
- RARP
 - ICMP
 - UDP
 - DNS
 - POP3

[9]

- (b) (i) Explain the “classful” or class-based system of IP addressing. How could this scheme lead to inefficiencies in the allocation of IP addresses?
- (ii) Convert the following hexadecimal IP address to *dotted decimal* format:
8BB80E0D
- (iii) Convert the following dotted decimal IP address to *binary* format:
212.58.226.40

[10]

- (c) What is the purpose of the *three-way handshake* used by TCP?

[6]

Question 5

- (a) What is the difference between a *virus* and a *worm*? List three possible symptoms of virus infection on a computer, and three things users can do to protect their computers against infection.

[8]

- (b) What are the two most important pieces of UK legislation relating to issues of computer security?

Summarise the relevant provisions of these Acts as they affect computer administrators and users.

[9]

- (c) (i) Explain what is meant by *defamation* and its implications for networked computing.
- (ii) Is it reasonable for organisations to discipline or dismiss employees for sending defamatory emails? Write a couple of paragraphs in support of your answer.

[8]

Question 6

- (a) What is the difference between *static* and *dynamic* web pages? Give examples of software which can be used to create dynamic pages. When should server-side applications be used and when are client-side technologies more appropriate?

[7]

- (b) Modern browsers allow users to limit use of interactive features in web pages. Why might you prefer to restrict the use of

- ActiveX controls?
- cookies?
- file downloads?

[6]

- (c) (i) Briefly explain the relation between HTML, XML and XHTML. What are the advantages of using XHTML rather than HTML as the standard language for Web pages?

[5]

- (ii) What changes need to be made to the following HTML document in order for it to conform to the XHTML standard?

```
<Html><Head><TITLE>Computing Degree Programmes</TITLE></Head>
<BODY BgColor = white>
<H1>Computing Degree Programmes</H2>
<OL>
<LI><b><i>BA Computing and Design</i></b>, 3-4 years full-time.
<li><b>BSc Computer Science</b>, 3-4 years full-time.
<LI><b>Diploma Management Information Systems, 1 year full-time.
</OL>
See the prospectus for further details.
<p>
Apply to: Admissions Department,<br>
Blacksmiths College, University of South-East London.
</BODY>
```

[7]