University of London International Programmes

CO1110 – Introduction to computing and the Internet

Coursework assignment 2

2015–2016

This coursework assignment consists of three questions. Full marks will be awarded for complete answers to all three questions. The marks for each part of a question are indicated at the end of the part in [.] brackets.

There are 100 marks available for Coursework 2.

Question 1

(a) Describe the main features of the Transport Control Protocol (TCP).

(b) Describe how TCP deals with lost packets.

(c) Explain how TCP correctly orders incoming data.

(d) Explain how TCP manages flow control.

(e) Describe the process of connection establishment and termination as used by TCP.

(f) Explain the meaning of CPU bound and I/O bound processes.

(g) Suppose that a process scheduling algorithm favours those processes that have used the least processor time in the recent past. Explain how this algorithm will favour I/O-bound processes over CPU-bound processes, but not starve CPU-bound processes.

[40]

Question 2

(a) Describe the role of subnetting in computer networks.

(b) A company with a network address of 156.157.0.0 wants to segment the network into 18 different subnets.

     i.   What subnet mask is needed? Justify your answer.
     ii.   Give the CIDR notation for the network.
     iii.   Find the number of bits used to represent a host and the number of usable hosts per subnets.
     iv.   Give the address of the first and last usable subnets.
     v.   Write down the range of host addresses in the first subnet.

[30]

Question 3

(a) How effective has the Computer Misuse Act 1990 been in the fight against hacking related offences? Is there a need for legislative reform in this area?

[15]

(b) A British Educational institution surveys its students, collecting information on ethnicity, disability, gender, full-time versus part-time status and age in order to break the data down by these categories. The data is sent for processing to a country that is outside the European Economic Area (EEA). What issues must the institution address in order to ensure that the transfer of data is legal under the Data Protection Act 1998?

[15]
[TOTAL 100]

[END OF COURSEWORK ASSIGNMENT 2]