

**Introduction to the Use of Computers (IS50004A) Assignment (Resit) :
2012-13**

You should construct your submission to this assignment as an HTML document, and make it accessible at the username- and password-protected URL <http://www.doc.gold.ac.uk/~maXXXyy/is50004a/resit-assignment/index.html> (replacing maXXXyy with your own user identifier). You **must** protect that URL by requiring a username and password, which you **must** e-mail to me (at c.rhodes@gold.ac.uk) to complete your submission. There are 15 marks available for the submission and formatting of the document, including clear expression and legible diagrams as well as suitable, standards-compliant HTML formatting and implementation of authentication. [15]

1. This part is about binary logic and arithmetic

(a) Convert the decimal number $(97)_{10}$ to its binary (base-2) representation. [3]

(b) Copy and complete the following truth table for the exclusive-or (XOR) logical operation: [2]

A	B	$A \oplus B$
0	0	
0	1	
1	0	
1	1	

(c) Compute the bitwise logical XOR of $(97)_{10}$ with $(10110101)_2$ (keep your answer in its binary representation). [2]

(d) Convert the answer from part 1c to its decimal (base-10) representation. [2]

2. This part is about networking.

(a) Draw a diagram illustrating the line, star and fully-connected networking topologies, with a total of 5 nodes in each of the networks. [5]

(b) For each of the topologies drawn above, calculate [3]

i. the number of links in the topology;

ii. the maximum number of hops required for a single packet to go from one host to another. [3]

(c) Discuss what network topology you would recommend for a network of 5 nodes. Does your recommendation change for networks of 20 nodes? [5]

3. This part is about the law.

(a) Describe the scope of the Computer Misuse Act (1990). [4]

(b) Over a five-year period, there have been about 100 prosecutions under the Computer Misuse Act. Discuss whether the law in this case is performing a useful function for society. [6]

The deadline for this coursework is **Thursday 29th August 2013**. Submission will occur by sending an e-mail with username and password information, which will trigger the reading of the specified personal URL in your homepage on **igor**, the Department's server. It is your responsibility to make sure that the URL is accessible, the authorization is correctly implemented, and the content you intend to submit is ready when you send your e-mail, which must be received by the day of the deadline.