



Staffordshire
UNIVERSITY

SCHOOL OF COMPUTING

DESIGN OF CORPORATE COMPUTER NETWORKS

CM075 - 3

SEMESTER 1

Date: Thursday 24th January 2002

Time: 2.00pm - 3.00pm

Time Allowed: 1 hour

This paper consists of three questions. You must answer ALL questions.

The marks allocated for each question, or for its parts, are shown on the right.

Each of the three questions carries equal marks.

Begin the answer to each question in a separate Answer Booklet.

All personal details must be completed at the top of every Answer Booklet. Please ensure that the corner of the booklet is folded down and sealed. Every question attempted should be clearly marked in the space provided on the front of the Answer Booklet.

Calculators are permitted.

1. (a) Describe the structure of an ATM packet (cell). [3 marks]
- (b) Critically appraise the short, fixed packet size with ATM as a means of delivering high-speed multimedia traffic. [4 marks]
- (c) Explain the features of ATM which make it a suitable carrier technology for Voice over IP data. [3 marks]
2. (a) IP uses several different classes of address. What are these classes and their ranges and how do they differ? [3 marks]
- (b) Why do we sometimes need an additional protocol on top of IP? [3 marks]
- (c) What additional services are provided by TCP? [2 marks]
- (d) Explain the terms 'cache' and 'proxy' when referring to HTTP. [2 marks]
3. (a) Home Networking is the collection of elements that process, manage, transport and store information enabling the connection and integration of multiple computing, control, monitoring and communication devices in the home.
- (i) Describe **EITHER** wired **OR** wireless home-networking technologies. [3 marks]
- (ii) List four home-networking standards and specifications. [2 marks]
- (b) Wireless application protocol (WAP) is an application environment and set of communication protocols for wireless devices designed to enable manufacture, vendor and technology-independent access to the internet and advanced telephony services.
- Explain the basic concept of WAP and discuss its applications, benefits and architecture. [5 marks]