











Universidade de Aveiro
Mestrado Integrado em Engenharia de Computadores e Telemática

Exame de Architecturas de Redes Avançadas - 20 de Janeiro de 2011

Duração: 2h30 horas. Sem consulta. Justifique cuidadosamente todas as respostas.

Grade per questions: 1: 0.7 points each. 2: 1.5 points each. Total Grade: ~22 points. Grades will be limited to a maximum of 20 points.

1. Answer in a brief manner to each question (*indicative space: 1/6 to 1/3 page per question*)
 - a. Policy based systems may be used for management. When can this be a good strategy? 
 - b. Why do we say that the SNMP management strategy is similar to a client-server system? 
 - c. Why do we use MIB-II? 
 - d. What is the difference between a CDN and a P2P network?
 - e. Why do we have a beacon in WiFi systems?
 - f. You can have RTS-CTS in wireless networks. Why do you avoid using it sometimes?
 - g. What is a scatternet in Bluetooth?
 - h. RTP has a timing stamp and a sequence stamp. Why? 
 - i. Why do you use signalling transcoding in a VoIP system? 
 - j. H.323 is a protocol for VoIP. What does it do? 
 - k. What is a network authentication protocol?
 - l. What is the flash crowd problem in a web system?
2. Justify carefully your answers to the following questions: (*indicative space: 1/3-to 1 page per question*)
 - a. Describe the two methods of operation of a policy-based system. 
 - b. Why would you perform business-oriented management? 
 - c. You have a well-defined notion of session in TCP. Discuss this notion in RTP, and what is the usage of this session in the RTP protocol. 
 - d. Describe what security methods you would apply in your WiFi network for supporting your PCs? How would you change this, if your network had to support guests?
 - e. How does power management work in 802.11?
 - f. You need to set up a wireless network in your desk to connect your printer, your laptop and your cell phone. Describe your wireless solution, and why?
 - g. Comment on security concepts associated to SNMP. 
 - h. You have elastic and inelastic applications. Which benefit from CDNs?
 - i. Discuss the routing/searching operations in Freenet.