Dig Comm I   Q1   2002

Consider the real time transport of ~~digital~~ audio across a network.

i) What are the advantages of digitising the audio?   [5]

ii) What are the disadvantages and how can they be mitigated?   [5]

iii) What characteristics of the end to end channel across the network would be desireable, and how are these different from those which would be desireable for time insensitive data?   [5]

iv) Discuss the applicability of asynchronous and synchronous multiplexing in carrying real time audio ~~traffic~~.   [5]

Answer
i) error control (ie one time error on digitisation)
   serial reuse of components (switches etc) and channel.
   ease of storage. (ease of general manipulation less reason here)
ii) quantisation noise (use more bits/~~sample~~)
    sampling error (sample at 2 times BW, more BW higher
                        sampling, eg telephony vs CD)
iii) fixed capacity, fixed delay, not so concerned with error.
iv) sync ideal if ~~really~~ fixed ~~export~~ rate source.
    async ok if guaranteed on delay made, buffering
       in ends can smooth.