

# QUIZ #1 GRADING GUIDELINES

## Question 1:

Distribute the 5 points as follows:

- 3 points for stating that the encoding techniques are intended for different kinds of signals.
- 1 point for pointing out that the bandwidth of the signals is different.
- 1 point for indicating that voice is slow-varying and thus there is temporal redundancy; or for indicating that it is possible to model the human vocal tract and thus achieve compression; or for talking about the psycho-acoustic models.

## Question 2:

Give 4 points for explaining the B-frame issue (i.e., best compression can only be achieved by using correlation with future frames). Give the remaining 1 point if they discuss pipelining delays and/or buffering issues.

## Question 3:

**(a):** Give 2 points for stating that, under technique 1, all the frames are of the same size, and 2 more points for correlating that with buffer size and thus latency.

**(b):** Give 2 points for indicating that the glitch will span multiple frames in both cases due to the frame dependencies. Give 1 point for noticing that, in technique 1, the glitch may extend for an indeterminate number of frames. Give 1 point for indicating that, in technique 2, the glitch is fully cleared when the I-frame arrives.

## Question 4:

Give 1 point for making statements about early packets (not an issue, may overflow the buffer, are both acceptable). Give 3 points for indicating that jitter is dealt with by pre-buffering. Give 1 point for indicating that latency is affected by this pre-buffering.

## Question 5:

Give 3 points for explaining why synchronization is needed. Take 0.5 points off these 3 points if they don't explicitly indicate that the decoder will either overflow or underflow if nothing is done. Give 1 point each for the requested two synchronization techniques (accept any two out of the three given in the solution).

## Question 6:

Give 3 points for stating that each enhancement layer takes a different IP multicast address; 3 points for stating that each enhancement layer takes a different priority level; and 2 points for indicating that these should be used together. Take 0.5 points off for not justifying why each choice is taken. If it is unclear from the answer whether or not they understood that multiple multicast addresses and precedence are used together, give 1 point out of the 2 assigned for this item.

## Bonus Question:

Give 1.5 points for saying that the result is the same, 0.5 points for recognizing why, and 2 points for indicating that the DCT is done after subtraction due to efficiency.