2010 Paper 5 Question 7

Digital Communication I

When Skype establishes an audio channel for telephony calls, it can do so in three ways:

- Direct connection, using UDP.

- Indirect connection, using UDP relayed via a Supernode.

- Indirect connection, using TCP to reach a Supernode, then UDP from there to the destination.

(a) Why does Skype provide these three modes?   [2 + 2 + 2 marks]

(b) Describe the different audio problems you might encounter when the first and last modes are used.   [8 marks]

(c) Which mode will normally provide the best audio experience? Why?
                    [2 marks]

(d) Suggest **two** further techniques that an Internet telephony application such as Skype can use to minimise the effects of packet loss. Discuss their relative merits.   [2 + 2 marks]