1999 Paper 9 Question 3

Digital Communication II

The following formula is used in a TCP implementation to estimate round trip times:

$$\overline{RTT}' = \alpha \times \overline{RTT} + (1 - \alpha) \times RTT_{sample}$$

Describe what this will do. How does one find a suitable value for the initial $\overline{RTT}$? How are RTT_{sample}'s taken? Under what conditions will this formula produce bad estimates? [10 marks]

An ISP wants to ensure that its customers use conformant TCP implementations.

How can a TCP implementation which functions satisfactorily as far as its user is concerned, be non-conformant? Why should the ISP be concerned?

Outline how you would provide tools for the ISP to detect non-conformant implementations. Where would you monitor TCP streams and why? [10 marks]