

## CSS322 – Quiz 7

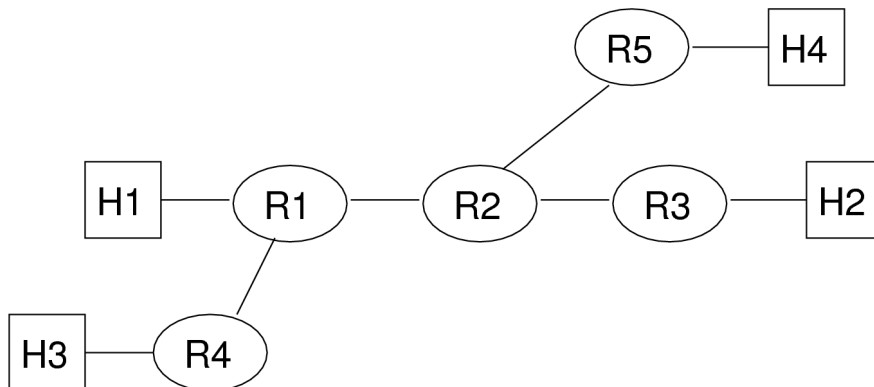
Name: \_\_\_\_\_

ID: \_\_\_\_\_

Mark: \_\_\_\_\_ (out of 6)

### Question 1 [6 marks]

Consider the IP network shown below.



A source host has an original IP packet, shown below, to send to a destination host. The figure below also shows the set of IPsec headers/trailers that are available when using Encapsulating Security Payload (ESP) with both confidentiality and authentication.



In your answers you can use the host and router names as the IP addresses. For example, the IP address of host H1 is: H1. Consider that host H1 has the original IP packet to send to H2.

- a) If ESP transport mode is used, draw the IP packet sent by R2. [2 marks]
  
- b) List the parts of the above packet that are:
  - i. Encrypted [1 mark]
  - ii. Authenticated [1 mark]
  
- c) If, instead of transport mode, ESP tunnelling mode was used from R1 to R3, for the packet sent by R2 what would the source IP address be in the outer IP header? [1 mark]
  
- d) What is an advantage of tunnelling mode (instead of transport mode) in ESP? [1 mark]