(a) In the context of memory management:

(i) What is the *address binding* problem? [1 mark]

(ii) The address binding problem can be solved at compile time, load time or run time. For each case, explain what form the solution takes, and give one advantage and one disadvantage. [3 marks each]

(iii) Under which circumstances do *external* and *internal* fragmentation occur? How can each be handled? [4 marks]

(iv) What is the purpose of a *translation lookaside buffer* (TLB)? [2 marks]

(b) Describe how UNIX handles user authentication. [4 marks]