Operating System Functions

(a) What are the key issues with scheduling for shared-memory multiprocessors? [3 marks]

(b) Processor affinity, take scheduling and gang scheduling are three techniques used within multiprocessor operating systems.

(i) Briefly describe the operation of each. [6 marks]

(ii) Which problem does the processor affinity technique seek to overcome? [2 marks]

(iii) What problem does the processor affinity technique suffer from, and how could this problem be overcome? [2 marks]

(iv) In which circumstances is a gang scheduling approach most appropriate? [2 marks]

(c) What additional issues does the virtual memory management system have to address when dealing with shared-memory multiprocessor systems? [5 marks]