SECTION A (40 marks)

Answer ALL the questions in this section.

1. Distinguish between semaphore and metaphor memory addressing as used in operating systems. (4 marks)
2. Explain each of the following terms as used in operating systems:

 kernel; (2 marks)  dispatcher. (2 marks)

1. Explain each of the following memory design requirements used in operating systems:

 coherency; (2 marks)

 locality of reference. (2 marks)

1. Describe each of the following terms as used in operating systems:

 relocating loader; (2 marks)

 job control language. (2 marks)

1. Distinguish between best fit and worst fit as used in memory management (4 marks)
2. Ruby the inclusion of RAID technology for data storage. Explain two advantages system would provide. (4 marks)
3. Explain the function of each of the following types of computer memories:

 cache memory; (2 marks)

(ii) virtual memory. (2 marks)

1. Cannine noted that most of the software she bought came on CD-ROMs. Justify this trend giving two reasons. (4 marks)
2. Distinguish between static RAM and dynamic RAM as used in memory management.

(4 marks)

1. Define each of the following terms as used in file management:

|  |  |  |
| --- | --- | --- |
| (i) | relative path; | (2 marks) |
|  | absolute path. | (2 marks) |

SECTION B (60 marks)

Answer any FOUR questions from this section.

1. (a) Explain the term service pack as used in operating systems. (2 marks)
   1. Purity intends to write a report on causes of deadlocks in process management.

 (i) Explain three possible causes that could be included in the report. (6 marks)

 Identify a possible solution for each of the three causes identified in (i).

* + 1. marks)
  1. Using a diagram, describe the NT file system as applied in operating systems.

(4 marks)

 Explain the term direct memory address as applied in operating systems. (2 marks)

(b) Rebecca has been tasked with creating security controls on standalone computers that were installed. Outline three software controls that she could put in place.

* + 1. marks)
  1. With the aid of a diagram, describe round robin scheduling algorithm (6 marks)
  2. Joshua ICT manager for Jomba company recomended the purchase of an operating system with graphical Interface. Explain two reasons for this move. (4 marks)

13. (a) Wit of an example, describe the term spooling as used in operating systems.

(3 marks)

1. Jerkin Company intends to replace its current operating system. Explain three factors other than cost, which they should consider in the selection of a new operating system.

(6 marks)

1. A currently running process could be suspended by the operating system due to different reasons. Explain three such reasons. (6 marks)

 List six examples of utility programs as applied in computer systems. (3 marks)

(b) During an operating systems class, the teacher discussed various attributes that could be assigned to a file. Explain three such attributes. (6 marks)

 With the aid of a diagram, describe the process control block (PCB). (6 marks)

3

15. (a) With the aid of a diagram, describe paged memory management technique.

(6 marks)

1. Most computer users prefer USB flash memory to compact disks for use as storage media. Explain three reasons for this emerging trend. (6 marks)
2. With the aid of an example, describe the term device driver as used in operating systems. (3 marks)

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4