Important Notes: Exam is closed books, notes etc. Shutdown your cellular phones. (meaning not allowed even silent) It's totally forbidden to exchange material such as eraser, pencil etc., also totally forbidden to take photos of exam or questions sheets. Answer the questions with sufficient but no extra garbage data. Using English to answer is a plus for you but not mandatory. (But you have to give all concept names in English)

Write all of your answers into the answering sheet. Good Luck...

- 1. Give Memory Hierarchy on computers in terms of speed and cost. Explain. (25 pts.)
- 2. Cite all kind of conditions that cause a process to be terminated, explain by a few
- 3. Explain how an outgoing physical address is calculated from an incoming virtual address in MMU? (Important notice: Explain on an imaginary page table how it is come.) calculated by giving an exemplary incoming virtual address) (25 pts)
  - 4. Explain by giving an example how Second Chance Page Replacement Algorithm works? (25 pts)

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