

# Bachelor in Information Technology (BIT)

## Term-End Examination

December, 2007

### CSI-01 : COMPUTER PLATFORMS

Time : 3 Hours

Maximum Marks : 75

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**Note :** There are *two* sections in this paper. Section A consists of objective type questions and short answer type questions. Section A is of 30 marks. All questions in Section A are **compulsory**. Attempt any *three* questions from Section B. Section B carries 45 marks.

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#### SECTION A

1. There are 10 objective type questions in this question. Each objective type question has four choices. Select the best choice as your answer. If none of the given choices is correct, then mark 0 as your answer. Each objective type question carries 1 mark. 10×1
- (i) The process of transferring data intended for a peripheral device into a disk so that it can be transferred to a peripheral at a more convenient time is known as
    - (a) Multiprogramming
    - (b) Spooling
    - (c) Caching
    - (d) Virtual memory
  - (ii) The Kernel is
    - (a) considered as the critical part of the operating system
    - (b) the software which monitors the operating system
    - (c) the set of primitive functions upon which the rest of OS functions are built up
    - (d) None of the above
  - (iii) Which of the following is a real-time system ?
    - (a) An on-line railway reservation system
    - (b) Student management system
    - (c) Aircraft control system
    - (d) Payroll processing system

- (iv) One of the performance measures of a disk is
- (a) clock speed
  - (b) mean time to failure
  - (c) data transfer time
  - (d) seek time
- (v) Which topology supports bi-directional links between each possible node pair combination ?
- (a) Star
  - (b) Ring
  - (c) Mesh
  - (d) Tree
- (vi) Which display device is best suited for CAD system ?
- (a) A CRT with vector refresh monitor
  - (b) LED display
  - (c) A CRT with raster scan monitor
  - (d) Plasma panel display
- (vii) HDLC is
- (a) Bit-oriented protocol
  - (b) Presentation layer protocol
  - (c) Code dependent
  - (d) Transport layer protocol
- (viii) Any instruction should have at least
- (a) 2 operands
  - (b) 1 operand
  - (c) 3 operands
  - (d) any number of operands
- (ix) End-to-End connectivity is provided from host-to-host in
- (a) network layer
  - (b) transport layer
  - (c) session layer
  - (d) network and data link layer

- (x) Notebook or laptop are
  - (a) first generation computers
  - (b) second generation computers
  - (c) third generation computers
  - (d) fourth generation computers
  
- 2. (a) Explain any three main responsibilities of a network administrator. 3
- (b) Distinguish between : 5
  - (i) Simple paging and Virtual paging
  - (ii) External and Internal fragmentation
- (c) Describe the usage of the following devices with the help of an example : 4
  - (i) Hub
  - (ii) Switch
  - (iii) Router
  - (iv) Bridge.
- (d) Describe the Von Neumann Architecture. What are the advantages and problems of this architecture ? How is an instruction executed using this architecture ? 4
- (e) When you are installing a new O.S. Windows 2000 over a previously installed Windows 98, what are the different aspects that you take into account ? 4

## SECTION B

Attempt any **three** questions from the following 4 questions. Each question carries 15 marks.

3. (a) What is the need of having computer networks ? What are the factors that contribute in making an effective and efficient computer network ? 5
- (b) "The rate of image refreshing could be reduced if a high persistence screen is used in a CRT." Is this statement true ? Explain. If true, what are the disadvantages of using a high persistence screen ? 5
- (c) What is a system call ? How is a system call different from a function in a procedure language ? Monitor two system calls used for I/O by OS. 5
4. (a) What is the need of cache memory in a computer system ? How can a small cache increase system performance ? Can we remove main memory in systems having cache ? Justify your answer. 5
- (b) What is system upgrade ? What is the need of upgradation ? What are the types of upgrades ? 4
- (c) Write the working of public-key encryption and symmetric encryption. 3
- (d) Write two advantages and two disadvantages of SCSI and IDE. 3
5. (a) What is a Bus ? What are the ways of accessing a Bus ? What is a System bus ? Why is it important to have high-speed bus in a system ? Explain. 5
- (b) Describe the various archival storage technologies available. Suppose your system does not have any archival storage device. Which one would you select for your computer ? 4
- (c) Write the internal working of the following printers : 6
- (i) Dot Matrix
- (ii) Ink Jet
- (iii) Laser Printer
6. (a) What is the need of TCP/IP model when we have OSI/ISO model ? Describe the top two layers of TCP/IP model. 5
- (b) Write at least four differences between DMA and I/O module. 4
- (c) Define the following terms : 6
- (i) Digital Certificate
- (ii) Buffering
- (iii) Time-sharing OS
- (iv) L1 cache and L2 cache