Bachelor in Information Technology (BIT)

Term-End Examination

June, 2007

CSI-01 : COMPUTER PLATFORMS

Time : 3 Hours   *Maximum Marks : 75*

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.*

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 valid, then mark 0 as your answer. Each objective type question carries 1 mark. *10×1=10*

   (i)   Virtual memory is

      (a)   an extremely large main memory

      (b)   an extremely large secondary memory

      (c)   an illusion of an extremely large memory

      (d)   a type of memory used in super computers

   (ii)   Cryptography is used in

      (a)   Scheduling of jobs

      (b)   File management

      (c)   Data validation

      (d)   Data protection

(iii) Spatial locality refers to the problem that once a location is referenced

    (a) it will not be referenced again

    (b) it will be referenced again

    (c) a nearby location is referenced soon

    (d) a distance location is referenced soon

(iv) The topology with highest reliability is

    (a) Bus

    (b) Star

    (c) Ring

    (d) Mesh

(v) Tera is 2 to the power of

    (a) 32

    (b) 30

    (c) 40

    (d) 25

(vi) The method of communication in which transmission takes place in both directions, but only in one direction at a time, is called

    (a) Simplex

    (b) Four-wire circuit

    (c) Full duplex

    (d) Half duplex

(vii) End-to-End connectivity is provided from host-to-host in

    (a) the network layer

    (b) the transport layer

    (c) the session layer

    (d) the data-link layer

(viii) Which of the following devices is used to connect multiple inputs to a single output line ?

    (a) Hub

    (b) Modem

    (c) Multiplexer

    (d) Network adapter

(ix) Direct Memory Access involves

    (a) transfer of data between CPU and memory using system bus

    (b) transfer of data between CPU and I/O devices using I/O bus

    (c) transfer of data between I/O and memory using I/O bus

    (d) None of the above

(x) An unauthorised user in a network is which of the following issues ?

    (a) Performance

    (b) Reliability

    (c) Security

    (d) All of the above

2. (a) What is a device driver ? What are the differences between the hard disk and CD-ROM ? Suggest two applications where you prefer the use of CD-ROM over hard disk. Justify your answer.

(b) Draw and explain the layered architecture of the operating system.

(c) What do you mean by System Software ? How is it different from application software ? Explain with examples.

(d) What is an internet ? Which communication protocol runs behind an internet ? Explain.

(e) Write the working of the following :

    (i) CRT

    (ii) LCD

SECTION B

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

3.   (a)   What is Ethernet ? Explain the frame format of Ethernet. What is the average size of Ethernet frame ?

   (b)   What is a system call ? How is system call different from a function in a procedure language ? Mention two system calls used for I/O by operating system.

   (c)   What are the security concerns for a computer connected on the network ? How would you handle these security threats ?

4.   (a)   Discuss in detail about the physical description, application and transmission characteristics of the following :

      (i)   Microwave

      (ii)   Optical fibre

      (iii)   Co-axial cable

   (b)   Why is the IC technology preferred over discrete components ? Justify your answer.

   (c)   What is GUI ? Discuss four components of GUI.

5.   (a)   What are performance measures of a processor ? Suppose you have an old Intel 486 based processor on a computer. What upgrade will you suggest for it ? Give justification of your answer.

   (b)   What is the advantage of DMA data transfer as opposed to program-controlled data transfer ?

   (c)   Describe the features of a good password system for a multiuser computer system.

   (d)   Explain the CSMA/CD Protcol. In which type of LAN is this protocol used ?

6.   (a)   Write any four differences between the Network operating system and Distributed operating system.

   (b)   What is the access mechanism for a hard disk drive ? Discuss various head mechanisms for disk drives.

(c)   Explain the concept behind data encryption and describe the technique defined by the data encryption standard.