Bachelor in Information Technology (BIT)

Term-End Examination

December, 2006

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*

(a)   Which of the following media ***cannot*** be used for star or bus topology ?

   (i)   Twisted pair cable

   (ii)   Co-axial cable

   (iii) Optical fibre

   (iv) None of the above

(b)   Which of the following layers is concerned with the medium and circuits to send electrical signals ?

   (i)   Physical layer

   (ii)   Data-link layer

   (iii) Session layer

   (iv) Transmission layer

(c)   Which of the following devices is ***not*** used in data communication ?

   (i)   Statistical multiplexer

   (ii)   Microprocessor

   (iii) Modem

   (iv) Front-end processor

(d) When a CPU is interrupted, it

    (i) stops execution

    (ii) acknowledges interrupt and continues

    (iii) acknowledges interrupt and branches to a subroutine

    (iv) waits till the interrupt is removed

(e) The three key elements for a graphics workstation include the host processor, display controller and

    (i) plotter

    (ii) keyboard

    (iii) CRT

    (iv) digitizer

(f) Cryptography is used in

    (i) scheduling of jobs

    (ii) file management

    (iii) data validation

    (iv) data protection

(g) The network topology that supports bidirectional links between each possible node is

    (i) ring

    (ii) star

    (iii) tree

    (iv) mesh

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

    (i) it will not be referenced again

    (ii) it will be referenced again

    (iii) a nearby location is referenced soon

    (iv) a distant location is referenced soon

(i) Overlay is

    (i) a part of an operating system

    (ii) a single memory location

    (iii) a single contiguous memory that was used in olden days for running large programs by swapping

    (iv) overloading the system with many user files

(j) The basic difference between broadband and baseband is

    (i) reliability

    (ii) transmission

    (iii) capacity

    (iv) availability

2. (a) What do you mean by an operating system ? What are the different functions of an operating system ? Is UNIX a multiuser, time-sharing and multiprogramming operating system ? Give reasons.   *4*

   (b) Describe the features of a good password system for a multiuser computer system.   *3*

   (c) Define the following terms :   *4*

    (i) System Call

    (ii) Full-duplex transmission

    (iii) L1 cache and L2 cache

    (iv) Digital Certificate

   (d) What is Ethernet ? Explain the protocol of Ethernet.   *3*

   (e) What is the need of data back-up ? Name at least two devices that can be used for data back-up. Which one of them is most suitable ? Justify your answer.   *3*

   (f) Which of the three components — processor, memory and hard disk is slowest ? Define the access-time for that component.   *3*

SECTION B

*Attempt any **three** questions. Each question carries 15 marks.*

3. (a) What do you mean by drive cache ? What are the advantages and disadvantages of using drive cache ?   *4*

   (b) What is circuit switching ? How is it different from packet switching ? What are the advantages of circuit switching over packet switching ?   *4*

   (c) What are the main objectives of distributed system ? Where can this type of system be used ? How is it different from parallel computers ?   *4*

   (d) Explain the OSI/ISO model.   *3*

4.   (a)   What do you mean by modem ? How does the dial-up work in the Internet when you are sending a message from a computer ?   *4*

         (b)   What is the advantage of DMA data transfer as opposed to program-controlled data transfer ?   *4*

         (c)   Give the block diagram of a raster-scan display processing system. Explain how images are stored in a refresh buffer.   *4*

         (d)   Discuss the relative merits of GUI systems from the point of view of   *3*

             (i)   programmer

             (ii)   operation user

             (iii)   end user

5.   (a)   Distinguish between the following :   *6*

             (i)   System calls and System commands

             (ii)   RAM and ROM

             (iii)   Bridge and Router

         (b)   What are the different types of services provided by an Internet ? Explain any four.   *4*

         (c)   What are the security mechanisms for a computer connected on the network ? Explain any one of those.   *5*

6.   (a)   Explain the function of   *5*

             (i)   Optical Character Reader

             (ii)   Magnetic Ink Character Reader

         (b)   What is the need of upgrading a computer system ? Explain any four computer system upgrades.   *5*

         (c)   What is an instruction ? How is it executed in Von Neumann machine ? Explain with the help of an example.   *5*