The Open University of Sri Lanka

B.Sc. Degree Programme: Level 03

Final Examination – 2006

AMU1190/NSU1190: Computer Studies

DURATION: TWO HOURS

Date: 10.11.2006 ***Time 9.30 am to 11.30 am***

ANSWER **FOUR** QUESTIONS ONLY.

Q1.

a. Indicate whether the following statements are TRUE or FALSE.

i. The speed of a computer is directly proportional to the number of instructions executed within a second.

ii. Memory is a special unit of the computer as compared with other machines.

iii. Comparatively, Mainframe computers are more powerful than Micro computers and Micro computers are more powerful than Mini computers.

iv. Optical Mark Reader (OMR) is used to read cards and paper documents which are written with magnetic ink.

v. All the application software run on system software.

vi. Arithmetic and Logic Unit (ALU) interprets the instructions and makes the computer executes these instructions.

b. Discuss how you could use the computer in an office, industry and education.

c. Briefly describe the following terms in the context of the Windows operating system.

i. File Manipulation

ii. Shutdown

iii. My Computer

Q2.

a. What is meant by a *Source Document*? Explain using an example.

b. Convert the following binary value into decimal and decimal value into binary.

(i) 11010.10011_2 (ii) 36.8125_{10}

c. "*A student whose index number is AD257 has scored 85 marks for his AMU1190 paper*"

i. Write down the internal representation of the data "AD257", "85" and "AMU1190". Note that the ASCII value of character *A* is 1000001 and character *U* is 1010101.

ii. How many bits are needed to code capital (A, B...) and small (a, b...) English letters and 10 digits?

Q3.

a. Suppose that a disk pack contains 5 platters. It is possible to store 512 bytes per sector and there are 120 sectors per track. One surface contains 340 tracks.

i. Calculate the total capacity of the disk pack.

ii. Suppose the rotational latency time of the above disk pack is 2.778 milliseconds. What is the disk rotating speed?

iii. Calculate the data transfer rate.

iv. If the average seek time is 0.0035 seconds, what is the average access time?

b. When a read-write command is received by the disk controller, how does the controller position the read-write head accordingly. Explain each step.

Q4.

a.

i. What is the relationship among *File*, *Directory* and *Drive*?

ii. What is the purpose of having File Allocation Table (FAT) in a drive?

b.

i. Write MS-DOS commands to format a blank diskette as a bootable one.

ii. What do you mean by a *source drive* and a *destination drive*?

c.

i. Describe the following MS-DOS commands.

(p) REN (q) DISKCOPY (r) DEL

ii. Compare and contrast the MS-DOS commands DIR/P and DIR/W.

Q5.

a.

i. Why do we use computer networks? Describe briefly indicating the advantages.

ii. Distinguish between FTP and Telnet.

iii. Write down five special features of the Internet.

b. Briefly describe each of the following in the context of the Internet.

i. Protocol

ii. WWW

iii. Uploading

iv. ISP

Q6.

a. What are the five essential steps in program development?

b. Develop a flowchart to find the sum of the series

$1 + 1/x + 1/x^2 + 1/x^3 \ \ldots + 1/x^n$

for given values of x and n.