

THE OPEN UNIVERSITY OF SRI LANKA
 B.Sc. DGREE PROGRAMME: LEVEL 03
 FINAL EXAMINATION 2010/2011
 AMU1190/NSU1190: COMPUTER STUDIES
 DURATION: 02 HOURS ONLY



DATE: 13th December, 2010

TIME: 9.30 a.m. – 11.30 a.m.

Answer FOUR questions ONLY.

Q1).

- a.
 - i. Briefly explain the terms *Field*, *Record* and *File* relevant to a magnetic tape.
 - ii. Briefly explain the data access types of *magnetic tapes* and *magnetic disks*, by stating the differences and the similarities.
- b.
 - i. Suppose that a disk pack contains 8 plates. It is possible to store 512 bytes per sector and there are 120 sectors per track. One surface contains 340 tracks and rpm of the disk pack is 3600.
 - a. Calculate the *total capacity* of the disk pack.
 - b. Calculate the *latency time*
 - c. What is the *average access time*, if the seek time is 30ms?
 - d. Calculate the *transfer rate*.
 - ii. Briefly explain the major delay in reading information from a disk. Suggest a method to eliminate this delay.

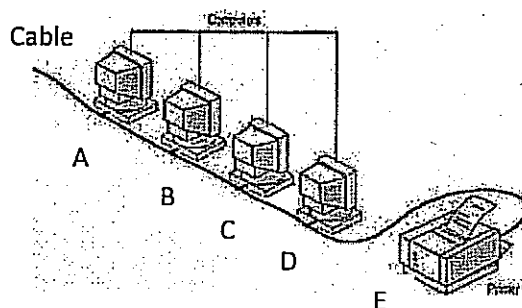
Q2).

- a.
 - i. According to capabilities, computers always come to the top compared with humans. Give three (03) real life examples where human capabilities can take over a computer.
 - ii. Distinguish between *volatile memory* and *nonvolatile memory*?
- b.
 - i. State three (03) basic functions of the control unit.
 - ii. What is meant by *Internal Data Representation* and *External Data Representation*?
 - iii. Briefly describe the following terms.
 - a. word size
 - b. speed

Q3).

a.

The following figure depicts a simple network.



A, *B*, *C* and *D* are computers and *E* is a Printer. Computer *A* wants information on computer *C* and *C* can reply. Answer the following questions in terms of the above computer network.

- i. What are *A* and *C*?
- ii. What is the common term that can be used for all components that are connected to the network?
- iii. What is the type of the above network, by considering the size of it?

b.

- i. Briefly describe three (03) special features of the Internet.
- ii. Write short notes on the following terms.
 - a. IP address
 - b. Protocol

Q4).

a.

- i. Briefly explain the five (05) essential steps in the Programme development process.
- ii. Why flow charts and pseudo codes are essential before writing a computer programme?

b.

Draw a flow chart to find t by allowing the user to enter values for U , S and A for the following equation.

$$S = Ut + \frac{1}{2} At^2$$

Q5).

a.

- i. Briefly explain the need of an operating system for a computer to function.
- ii. What are the four (04) programmes that are included to the system software?
- iii. Explain (03) types of application software that can be used for the office work.

b.

- i. Write short notes on the following.
 - a. OS/2
 - b. Unix
- ii. What is the purpose of having two system areas *Directory* and *File Allocation Table* in MS DOS operating system?

Q6).

a.

- i. Comparatively describe *Ink Jet Printers* and *Bubble Jet Printers* by giving advantages and disadvantages.
- ii. What are the purposes of using an Optical Mark Reader (OMR) and what is the main disadvantage of it?

b.

- i. Give three (03) advantages of *high level languages* over *machine languages*.
- ii. What is a *compiler*?
- iii. How does the compiler differ from the Interpreter?

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