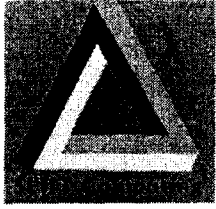


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**SLIIT Computing (Pvt) Ltd.**

# **Bachelor of Information Technology**

**Final Examination**

**Year 1, Semester 1, 2006**

Tuesday, 16<sup>th</sup> May 2006

**Fundamentals of Information Technology (N100)**

Duration: 3 Hours

(Time 9.00 a.m. – 12.00 noon)

## **Instructions to Candidates**

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- This paper contains **FIVE (5)** questions on **THREE (3)** Pages.
- Answer **ALL** questions in the **WORKBOOK** provided.
- The entire exam is worth 100 points. The point value of each question is given.

### **Question 1**

**(16 marks)**

1. What are the basic elements of a computer system? Give the operations of each.  
(10 marks)
2. Give four characteristics of the Von Neumann architecture. (2 marks)
3. Briefly describe each of the following: ( 4 marks)
  - a. Impact printers.
  - b. Flatbed plotter.
  - c. Optical Character Recognition.
  - d. VDU Resolution.

### **Question 2**

**(14 marks)**

1. What is the difference between a procedural language and a non-procedural language? (1 mark)
2. Define and distinguish between Tailor made packages and Bespoke packages.  
(4 marks)
3. What are the tasks of a Computer Scientist? (2 marks)
4. One of the problems in the 1<sup>st</sup> generation was to program with a large number of switches and cables. Give two solutions for this problem. (4 marks)
5. Name three operating systems used by the 4<sup>th</sup> generation. (3 marks)

### **Question 3**

**(20 marks)**

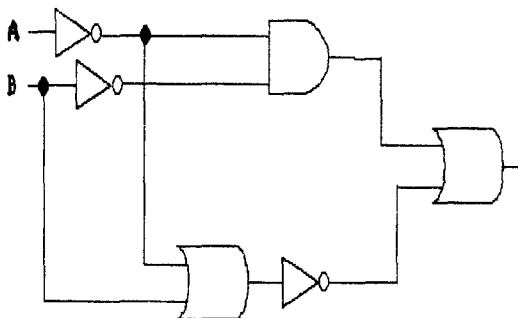
1. Considering the Direct file organization, give short answers to the following questions. (4 marks)
  - a) How are files stored?
  - b) How can records be accessed?
  - c) What is the storage media used?
  - d) When is it suitable to use a direct file organization?
2. Briefly explain three methods of backing up data. (6 marks)
3. Define and distinguish between On-line processing and real-time processing?  
(4 marks)

4. What is the objective of having an Operating System? (2 marks)
5. What are the different types of Operating Systems? (4 marks)

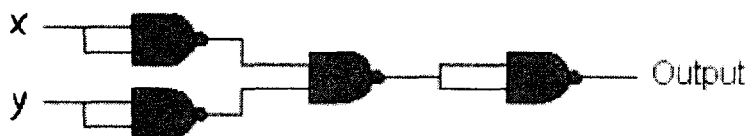
#### Question 4

(30 marks)

1. Convert the following numbers.
  - a. 33.8125 to BINARY. (4 marks)
  - b. 11101011001 to HEXADECIMAL and OCTAL. (4 marks)
2. Subtract the following:
  - a.  $1010111 - 111101$  (3 marks)
3. Add the following:
  - a.  $4DA_{16} + 3CB_{16}$  (2 marks)
  - b.  $10100011, 01001011, 10111$  (2 marks)
4. Reevaluate using binary multiplication (achieved by combination of shifts & additions) making use of 8-bit representation. (5 marks)
  - a.  $-15 \times 6$
5. Find the Boolean expression and the truth table of the following circuit. (4 marks)



6. Which ~~basic~~ gate is the following circuit equivalent to? (6 marks)  
(Note: Prove your answer by giving the truth tables for the given circuit and the equivalent basic gate)



**Question 5****(20 marks)**

1. What are the three main challenges of using the World Wide Web to advertise products? (3 marks)
2. What is a communication protocol? Name four Internet protocols. (5 marks)
3. What are the 7 ways of making an e-shop visible on the Web? (3 marks)
4. Write three risks associated with E-commerce. (3 marks)
5. "Is introduction of E-commerce to business in Sri Lanka beneficial?" Comment on the above statement. (6 marks)

-----**End of paper**-----