



Easter University , Sri Lanka
Department of Mathematics
First Year Examination in Science – 2007/2008
Second Semester(August / September 2009)
CS 106 -Computer Organization and Architecture

Answer all questions.

Time: Two hours

Question 01

- (a) With an example, illustrate the difference between computer architecture and computer organization.
- (b) Simplify the following:
 - (i) $y = A \bar{C} + AB\bar{C}$; (ii) $y = \overline{AB \bar{C}D} + \overline{ABCD}$;
 - (iii) $y = \overline{A}D + ABD$; (iv) $y = (\overline{A} + C).(B + \overline{D})$.
- (c) State and prove De Morgan's Theorem.

Question 02

- (a)(i) Explain how does the computer memory work ?
(ii) Differentiate between the terms RAM and ROM.
(iii) What is DRAM? In which form does it store data ?
- (b) Explain the following:
 - (i) Volatility. (ii) mutability. (iii) Addressability.
 - (iv) Fundamental of storage technology.

Question 03

- (a) Explain what is a Processor and what does it do?
- (b) What are the different functional units in Processor 8086?
- (c) Explain the following:
 - (i) Address bus. (ii) Data bus. (iii) Control bus
 - (iv) Cache memory.

Question 04

- (a) Draw logical circuit diagram for the following expression :
 $Z = ab + \bar{b}c + \bar{c}a$.
- (b) Copy and complete the following truth table:

A	B	A.B	A+B	(A+B).(A.B)
0	0			
0	1			
1	0			
1	1			

- (c) Copy and complete the following truth table:

A	B	A.B	(A.B)'	B + (A.B)'
0	0			
0	1			
1	0			
1	1			