UNIVOTEC

UNIVERSITY OF VOCATIONAL TECHNOLOGY

Faculty of Training Technology

Bachelor of Technology in Information & Communication Technology (Multimedia & Web, Software, Network) 2015 / 2016 (B1)

Year I – Semester- I Examination - September -2015

Computer Architecture & Operating System IT10301

Instructions : Answer five questions only

Duration : 03 Hours

1.

1.1. Simplify the following expressions using Boolean algebra.

a. AB+ A (B+C) +B(B + C) (Marks 05)

b. (Marks 05)

1.2. Draw logic circuits for the following Boolean equations.

a. (Marks 05)

b. (Marks 05)

1.3. Prove the following Boolean algebra laws using truth tables.

a. (Marks 05)

b. (Marks 05)

2.

2.1. Draw the truth table and the logic diagram of 2-4 Decoder. (Marks 10)

2.2. Compare and contrast Multiplexer and De- Multiplexer. (Marks 10)

3.

3.1. Explain the function of the D-flip flop using a diagram. (Marks 06)

3.2. Discuss the advantages of Memory a cell over a D- flip flop as a memory device. (Marks 06)

3.3. Compare and contrast semiconductor memory and magnetic memory. (Marks 08)

4.

4.1. Design a logic circuit to store two bits of memory using a detail logic diagram of a memory cell. (Marks 10)

4.2. Design a logic circuit to store 32 bits (word length 8 bits) using a block diagram of a memory chip with both the capacity and word length of four bit. (Marks 10)

5.

5.1. Briefly explain the instruction set of a micro processor. (Marks 10)

5.2 Briefly explain the fetch and executing cycle. (Marks10)

6.

6.1. Briefly explain the functions of an operating system. (Marks 10)

6.2 Briefly explain the process management in an operating system. (Marks10)