



# **MASENO UNIVERSITY**

## **UNIVERSITY EXAMINATIONS 2017/2018**

### **SECOND YEAR FIRST SEMESTER EXAMINATIONS FOR THE DEGREE OF BACHELOR OF SCIENCE IN INFORMATION TECHNOLOGY**

#### **CITY CAMPUS - EVENING**

#### **CIT 209: PLATFORM TECHNOLOGIES II**

Date: 5<sup>th</sup> March, 2018

Time: 5.30 - 8.30pm

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#### **INSTRUCTIONS:**

- Answer ALL Questions in Section A and any other TWO in Section B
- Use a new page for every question attempted and indicate number on the space provided on the page of the answer sheet
- Fasten together all loose answer sheets used
- No mobile phones in the examination room



## SECTION A: ANSWER ALL QUESTIONS

### Question one (30 marks)

- a) Explain the meaning of the following terms/phrases (10 marks)
  - i) Computer Architecture
  - ii) Computer Organization
  - iii) Virtual Memory
  - iv) Thread
  - v) Device driver
- b) State any three reasons why computer organization and architecture should be studied (3 marks)
- c) State and briefly explain any five factors that can determine the performance of a computer system (5 marks)
- d) Differentiate between Static RAM (SRAM) and Dynamic RAM (DRAM) (6 marks)
- e) State three advantages and three disadvantages of multiprocessing systems (6 marks)

## SECTION B: ANSWER ANY TWO QUESTIONS

### Question Two (20 marks)

- a) Provide brief explanations of CISC and RISC computer architectures (4 marks)
- b) State six characteristics of *Complex Instruction Set Computer* (CISC) and six characteristics of *Reduced Instruction Set Computer* (RISC) (12 marks)
- c) Give comparison between CISC and RISC computer architectures (4 marks)

### Question Three (20 marks)

- a) Enumerate four problems of messages in message passing model of interprocess communication (4 marks)
- b) Remote Procedure Call (RPC) is a model used for interprocess communication in a distributed environment
  - i) State the steps in RPC (4 marks)
  - ii) List four possible issues with RPC (4 marks)
  - iii) State four types of failures that can be experienced in RPC (4 marks)
- c) State four advantages of distributed shared memory(DSM) as a method of interprocess communication (4 marks)

### Question Four (20 marks)

- a) Identify and describe four various categories of multiprocessing systems (16 marks)
- b) State and briefly explain four advantages of systems with multiple CPUs (4 marks)

**Question Five (20 marks)**

- a) The transformation of data from main memory to cache memory is referred to as a mapping process. State and briefly explain three types of mapping used in a computer system. (12 marks)
- b) Use simple block diagrams to explain Master-Slave and Symmetric multiprocessors (SMP) architectures (8 marks)