

KENYA METHODIST UNIVERSITY

END OF TRIMESTER EXAM APRIL 2008

FACULTY : SCIENCE AND SOCIAL STUDIES
DEPARTMENT : COMPUTER INFORMATION SCIENCE
COURSE CODE : COMP 101
COURSE TITLE : INTRODUCTION TO COMPUTER SCIENCE

Total Marks (60)

TIME: 2 ½ HOURS

Instructions

Answer all questions in SECTION A and ANY ONE question in SECTION B

SECTION A – Answer all questions (30 marks)

1. Define the following terms
 - a. Parsing
 - b. Abstraction
 - c. Algorithm (3 marks)
2. Name and briefly describe the five methods that could be used in problem solving. (5 marks)
3. Perform the following conversions:
 - a. 10111.101101_2 to decimal
 - b. 47735_8 to hexadecimal (6 marks)
4. Differentiate between *syntax* and *semantics*. (3 marks)
5. Describe the following software abilities:
 - a. Portability
 - b. Availability
 - c. Maintainability (6 marks)
6. Name and briefly define the five programming language paradigms. (5 marks)
7. Some languages use **lazy evaluation**. What does this mean? (2 marks)

SECTION B – Answer ANY ONE question

Question 1 – 30 marks

1. What are the two primary resources required for executing computer algorithms? (4 marks)
2. Discuss the three main functions of an operating system. (9 marks)
3. Discuss the three key ideas behind software engineering (9 marks)

4. Write a command line used to do each of the following in Ms-DOS.
 - i. Delete a file. Call the file **temp.exe**.
 - ii. Copy a file from one directory to another. Copy **temp.exe** from C: to a folder in E: called **MyFolder**.
 - iii. View the content of **temp.exe** file.
 - iv. Assign a hidden attribute to the **temp.exe** file.

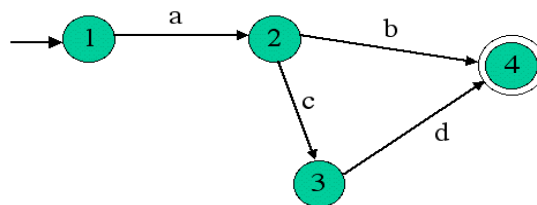
(8 marks)

Question 2 – 30 marks

1. With the aid of a diagram, describe the five stages of a compiler. (20 marks)
2. Consider the finite state machine below:
 - a. What two strings can be accepted by this machine to yield a YES response? (4 marks)

Finite State Machines

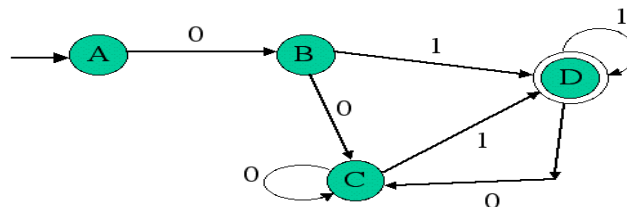
A Sample Machine



- b. Consider the finite state machine below. Give the transition listing for the string 0111. (4 marks)

Finite State Machines

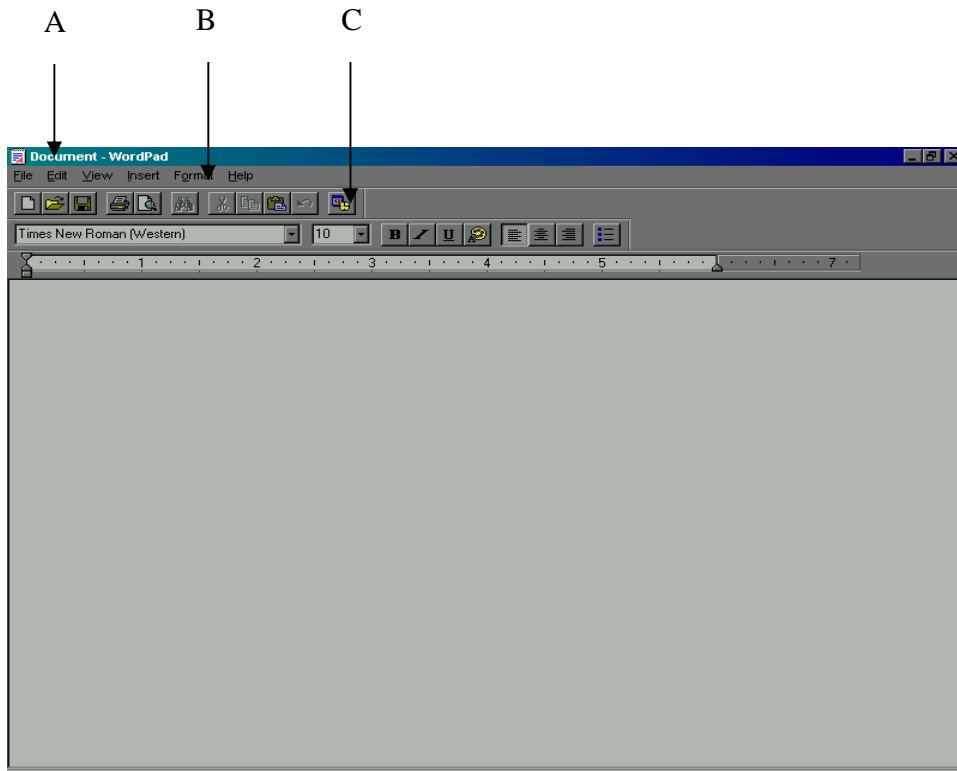
A Sample Machine



3. Why is computer memory incremented by powers of 2? (2 marks)

Question 3- 20 marks

1. What is a taskbar? (1 marks)
2. Outline how you would select a non-contiguous range of cells in Excel. (2 marks)
3. Label the following diagram: (3 marks)



4. Explain two ways of creating tables in WORD. (4 marks)
5. Give three features of a good word processor. (6 marks)
6. Write the command that will change the DOS prompt to:
 - a. A:\>Computer (2 marks)
8. Distinguish between relative and absolute cell reference in Excel (2 marks)
9. I would like to create a Batch file that performs the following actions. Write down the complete steps to carry this out. (10 marks)
 - a. Clears the screen
 - b. Changes to the default directory C:
 - c. Opens a folder in C: called MINE
 - d. Displays the contents of a file in MINE called FILE