NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY
FACULTY OF APPLIED SCIENCE
COMPUTER SCIENCE DEPARTMENT
JULY SUPPLEMENTARY EXAMINATIONS 2001

SUBJECT: INTRODUCTION TO COMPUTER SCIENCE
CODE: SCS 1104

INSTRUCTION TO CANDIDATES

Answer Any 5 questions

Time: 3 hours

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1. a) State the 4 main parts of a computer system [4]

   b) Discuss two main types of operating systems [4]

   c) Explain the differences between the MSDOS **diskcopy** and **xcopy** command [4]

   d) Why is the **attrib** command important? [4]

   e) State 2 advantages of **impact printers** over **non-impact printers** [4]

2. (a) (i) What is disk formatting and why is it necessary. Give command for creating a start-up disk in MSDOS. [4]

   ii) State the purpose of Cache memory [4]

   iii) State the differences between SRAM and DRAM [2]

   b) i) Mangura Council charges vehicles at the parking lots. Suppose the charges are as follows:
   $5-00 per vehicle for first 30minutes. The rate changes to $6-00 per 30min if the vehicle remains in parking lot for more than three hours. Write a program to calculate the total cost for a vehicles parked. The program should prompt the user to enter the time of parking and should give total costs. [8]

   ii) State the difference between **syntax errors** and **logic errors** [2]

3.(a) State the purpose of the following components in a microprocessor

    i)   control unit

    ii)   ii) ALU

    iii)   iii)Accumulator iv)Clock   [8]

  b) Write a program which solves equations of the form:

$ax^2 + bx + c = 0.$ Your program should tell the user if the roots are imaginery[8]

4. a)   State the 2 advantages of using a database over a file system of data

    storage   [4]

    b)   What is the advantage of **fixed- length** records over **variable- length**

        records in file system   [4]

    c)   Give an example of a record Employee and state its typical fields [4]

    d)   Discuss the following file types i)Random ii)sequential   [4]

    e)   Discuss briefly the following data structures (i)arrays ii)queue   [6]

5. (a)   Write a program which converts SA Rands to Zim$ pounds. The

        program should prompt the user to enter the day's exchange rate and

        create a table for a range eg 1 to 1000.   [8]

    b)   Draw the flowchart symbols for the following (i)process ii)input

        iii)decision iv)document   [4]

    c)   State the differences between a cross-assembler and self-assembler [4]

    d)   State 2 advantages of using high level languages rather assembly

        language programs languages   [4]

6. Write a brief note on the following:

  a) (i)   floppy disks [3] (ii) CD-ROM   [3]

    ii)   hard-disks   [3]

  b) Why is hard disk storage preferred to floppy disk storage   [1]

    What is 'Virtual storage   [4]

  c) (i)What is a transducer .   [2]

  d) Discuss any 2 transducers   [4]

7 **Write a brief note on the following:**
i) Internet

ii) Log-on passwords

iii) web-browsers

iv) Modem

b) Write a program which converts degrees in Farheight to degrees in Celsius
and gives a results in tabular form. [8]