TECHNICAL UNIVERSITYOF MOMBASA

FACULTY OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF ELECTRICAL AND ELECTRONIC ENGINEEERING

EEE2207 ENGINEERING SOFTWARE DEVELOPMENT AND APPLICATIONS II

SERIES: MAY 2016

Instructions

- This paper consists of FIVE questions
- Answer any THREE questions
- All Questions carry equal marks

QUESTION ONE

(a)(i)   Explain the term 'variable' as used in C

   (ii)   Explain the rules for variables   (6 marks)

 (b)   Explain the FIVE data types used in C   (7 marks)

 (c)   Three variables x, y, and z are to be used in a program where z is the sum of x and y. Write C
           program that determines and displays the value of z   (7 marks)

QUESTION TWO

(a)   Write C statements for the THREE selection statements   (9 marks)
(b)   Write a C program to display the first ten integers in reverse order beginning with 10 using
                i.   A *while* statement
                ii.   A *for* statement   (11 marks)

QUESTION THRE

(a) (i)   Explain the term *'pointer'* .

   (ii)   For the array int x [20] = {20, 19, 18, 17, 16, 15}:

                I.   Explain the array
                II.   State the 4th and 10th elements
                III. state the total number of elements in the array   (6 marks)

(b)   Write a C program that uses a for statement to display to initialize an array of size 25then
           display the array in two columns one for elements and the other for integer values.
                                                                                         (8 marks)
(c)   Distinguish between linear search and binary search in arrays and give ONE advantage for each
           case.   (6 marks)

QUESTION FOUR

(a)   Distinguish between synchronous and asynchronous communication.   (4 marks)

(b)   Draw a labeled diagram of the DB-9 connector and explain the functions of the pins
                                                                                         (6 marks)
(c)   With the aid of diagrams describe the following ports
                i.   RS-232
                ii.   DB-25   (8 marks)

QUESTION FIVE

(a)(i)   State any THREE applications of an interface card

   (ii)   With the aid of a diagram describe the FOUR layers of the TCP/IP

                                                                    (11marsk)

(c)   Write C statements to:

              i.   initialize the RS-232 serial port
              ii.   open the RS – 232 serial port   (9 marks)