Code: D-14 Subject: COMPUTER SOFTWARE FUNDAMENTALS
Time: 3 Hours Max. Marks: 100

NOTE: There are 11 Questions in all.

   Question 1 is compulsory and carries 16 marks. Answer to Q. 1. must be written in the space provided for it in the answer book supplied and nowhere else.
   Answer any THREE Questions each from Part I and Part II. Each of these questions carries 14 marks.
   Any required data not explicitly given, may be suitably assumed and stated.

Q.1 Choose the correct or best alternative in the following: (2x8)
   a.   Dividing a project into segments and smaller units in order to simplify the analysis, design and programming efforts is known as

(A) Modular Approach. **(B)** Top Down Approach.
(C) Bottom Up Approach. **(D)** Structured Approach.

b. The errors that are detectable by the computer are

(A) Syntax errors. **(B)** Semantic errors.
(C) Logical errors. **(D)** Internal errors.

c. In flowcharts, the symbol used to indicate the comment / remarks on the contents of a procedure is

   (A) COMMENT Symbol. **(B)** ANNOTATE Symbol.
   (C) CONNECTOR Symbol. **(D)** PARALLELOGRAM Symbol.

d. In MS-DOS, the command, which divides the surface of a blank floppy disk into sectors and assigns a unique address to each one is

   (A) FORMAT **(B)** FAT
(C) VER **(D)** CHKDSK

e. LINUX is a / an
   (A) Operating System. **(B)** Programming Tool.
(C) Network Security System. **(D)** Computer Language.

f. Which of the following is a Spreadsheet package
(A) Corel Draw. **(B)** Wordstar.
(C) EXCEL. **(D)** MS-WORD

g. The keyboard command to copy a block of text is

   (A) Ctrl N. **(B)** Ctrl C.
   (C) Ctrl X. **(D)** Ctrl V.

h. The programming language which combines features from both high level and assembly languages for development of a system, is

(A) BASIC. (B) COBOL.
(C) PASCAL. (D) C.

PART I
Answer any THREE Questions. Each question carries 14 marks.

Q.2 a. Draw a flowchart to generate a sequence in arithmetic progression whose initial term is a and the common difference d, are given. What will be the value of its nth term? **(7)**

b. Construct a decision table to determine the largest number of the given three numbers. **(7)**

Q.3 a. Write an algorithm to find if the given year is a leap year or not. **(7)**

b. Write the pseudocode to find the sum of the digits of a given 5-digit number. **(7)**

Q.4 a. Write a program in C to print a string in reverse order. **(7)**

b. Machine language is difficult and error prone. Explain. **(3)**

c. Give four advantages of assembly language programming over machine language programming. **(4)**

Q.5 a. In what situations is an interpreter preferred over the compiler. **(2)**

b. What is a linker? Explain the process of compiling and linking multiple source program files. **(5)**

c. How many divisions are there in a COBOL program? Explain the function of each. **(5)**

d. What do COBOL and FORTRAN stand for? **(2)**

Q.6 a. Differentiate between bottom-up and top-down programming techniques. **(6)**

b. Explain the control structures used in structured programming with the help of a flowchart. **(8)**

PART II
Answer any THREE Questions. Each question carries 14 marks.

Q.7 a. When are the processes said to be in a deadlocked state? Explain with the help of an example. **(6)**

b. Two methods are used for transferring data from the controllers local buffer to an appropriate memory area of the computer. Name and explain them. **(8)**

Q.8 a. What is virtual memory? When is it used? Explain the three basic concepts used for realization of virtual memory. **(8)**

b. Multiprogramming and time sharing both involve multiple users in the computer concurrently. What is the basic difference between the two concepts? **(6)**

Q.9 a. What is a spreadsheet package? Give the uses of the spreadsheet package. **(2+3)**

b. Explain the five most commonly used commands in a spreadsheet package. **(5)**

c. Write the steps to insert cells, columns and rows in a spreadsheet. **(4)**

Q.10 a. What is Thesaurus? **(3)**

b. What is a Mail-Merge? Explain the steps in Mail-Merge technique. **(7)**

c. Write the steps to create a table with 3 rows and 3 columns indicating the name, marks in maths and science. Align the names column to the left and the marks column to the right. **(4)**

Q.11 a. Write short notes on Graphics package. **(7)**

b. Give the advantages and disadvantage of LINUX operating system. **(7)**