Code: DE14　　　　　　　　　**Subject: COMPUTER SOFTWARE FUNDAMENTALS**
Time: 3 Hours　　　　　　　　　　　　　　　　　　　　**Max. Marks: 100**

JUNE 2011

NOTE: There are 9 Questions in all.
- **Question 1 is compulsory and carries 20 marks. Answer to Q.1 must be written in the space provided for it in the answer book supplied and nowhere else.**
- **The answer sheet for the Q.1 will be collected by the invigilator after 45 Minutes of the commencement of the examination.**
- **Out of the remaining EIGHT Questions answer any FIVE Questions. Each question carries 16 marks.**
- **Any required data not explicitly given, may be suitably assumed and stated.**

Q.1　　**Choose the correct or the best alternative in the following:**　　　　　**(2×10)**

　　a.　When a key is pressed on the keyboard, which standard is used for converting the keystroke into the corresponding bits?

　　　　(A) ANSI　　　　　　　　　　　**(B)** ASCII
　　　　(C) EBCDIC　　　　　　　　　**(D)** ISO

　　b.　A Pixel is

　　　　(A) A computer program that draws picture
　　　　(B) A picture stored in secondary memory
　　　　(C) The smallest resolvable part of a picture
　　　　(D) None of these

　　c.　Which technology is used in Compact disks?

　　　　(A) Mechanical　　　　　　　　**(B)** Electrical
　　　　(C) Electro Magnetic　　　　　**(D)** Laser

　　d.　Which of the following storage devices can store maximum amount of data?

　　　　(A) Floppy Disk　　　　　　　　**(B)** Hard Disk
　　　　(C) Compact Disk　　　　　　　**(D)** Magneto Optic Disk

　　e.　Who invented the high level language C?

　　　　(A) Dennis M. Ritchie　　　　　**(B)** Niklaus Writh
　　　　(C) Seymour Papert　　　　　　**(D)** Donald Kunth

　　f.　Algorithm and Flow chart help us to

　　　　(A) Know the memory capacity
　　　　(B) Identify the base of a number system
　　　　(C) Direct the output to a printer
　　　　(D) Specify the problem completely and clearly

g. Which device is used as the standard pointing device in a Graphical User Environment?

(A) Keyboard (B) Mouse
(C) Joystick (D) Track ball

h. Execution of two or more programs by a single CPU is known as:

(A) Multiprocessing (B) Timesharing
(C) Multiprogramming (D) None of the above

i. Operating system

(A) Link a program with the subroutines it references
(B) Provides a layered, user-friendly interface
(C) Enables a programmer to draw a flowchart
(D) None of the above

j. The errors that can be pointed out by the compiler are

(A) Syntax errors (B) Semantic errors
(C) Logical errors (D) None of the above

Answer any FIVE Questions out of EIGHT Questions.
Each question carries 16 marks.

Q.2 a. Write an algorithm and flowchart to check whether a number is palindrome. Eg 1234321 **(5)**

b. Draw the basic format of Decision Tables and write the role of each part. What are its advantages and limitations? **(5)**

c. What are the characteristics necessary for a sequence of instructions to qualify as an algorithm? Write the factors we often use to judge the quality of algorithms. **(6)**

Q.3 a. What is Structured Programming? **(5)**

b. We use both DO…WHILE and REPEAT…UNTIL for looping. Explain the difference between the structures with example. **(5)**

c. Differentiate between Top-Down and Bottom-up Design Approach. **(6)**

Q.4 a. Why do we refer to machine and assembly languages as low-level languages? **(6)**

b. Illustrate machine independent characteristics of a High level language. **(6)**

c. Name the three categories of computer languages in order of their ease of use. Briefly define each. **(4)**

Q.5 a. Define the following:
- (i) Throughput
- (ii) Turnaround Time
- (iii) Response Time **(6)**

    b. What is main objective of memory management module of an operating system? **(6)**

    c. What is Operating System capability enhancement software? Write three types of software that belong to this category. **(4)**

Q.6 a. Write a program in C to generate the sum of the digits of a number. [e.g. 456=4+5+6=15] **(4)**

    b. Write advantages and Limitations of Sequential, Direct and Indexed-Sequential File Organizations. **(8)**

    c. Write a short note on Graphics Package. Mention the features and examples. **(4)**

Q.7 a. What is a Personal assistance package? Mention some commonly supported features found in modern personal assistance package. **(6)**

    b. Write the steps to use Mail-Merge feature of MS-Word with an example. **(5)**

    c. Write a short note on spreadsheet, its uses and salient features. **(5)**

Q.8 a. What is virtual memory? **(4)**

    b. What is a pre-processor? Explain how a source program written in an extended languages is converted to its equivalent executable object code. **(8)**

    c. Differentiate between Syntax Errors, Semantic Errors and Logic errors. **(4)**

Q.9 Write short notes on any **FOUR** of the following:

- (i) Batch Processing
- (ii) Time Sharing
- (iii) Deadlock
- (iv) Modular Programming
- (v) Linker/Loader **(4×4)**