

## DipIETE – ET (OLD SCHEME)

Code: DE14  
Time: 3 Hours

Subject: COMPUTER SOFTWARE FUNDAMENTALS  
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 Wirth  
(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

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

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- 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)