

Code: DE-14

Subject: COMPUTER SOFTWARE FUNDAMENTALS

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| JUNE 2007 |
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Time: 3 Hours

Max. Marks: 100

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.
 - 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.
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Q.1 Choose the correct or best alternative in the following: (2x10)

- a. Quality of an Algorithm is decided by
- (A) Time requirement. (B) Memory requirement.
(C) Accuracy of Solutions. (D) All of the above.
- b. The decision table entries are dependent on
- (A) Output data (B) Input data
(C) Program variables (D) Action statements
- c. The _____ language programs can be better documented
- (A) Assembly language (B) Machine language
(C) High level language (D) None of the above
- d. Assembly language : Assembler, High level language: _____
- (A) Dispatcher (B) Interpreter
(C) Linker (D) Compiler
- e. Multiple inheritance means
- (A) A child class has multiple objects of a parent.
(B) A child class inherits from many parents.
(C) A parent class creates many child classes.
(D) A parent class creates multiple parent classes.
- f. Which of the following is more a scientific oriented language?
- (A) FORTRAN (B) BASIC
(C) C (D) COBOL

- g. J=0;
 For j= 5 to 9
 Read A, B;
 Next j;
 How many times the above loop iterates?
- (A) 5 times (B) 9 times
 (C) 0 times (D) 4 times
- h. MFT and MVT are types of
- (A) Time sharing systems (B) Multiprogramming systems
 (C) Batch processing systems (D) Real time systems
- i. Multiprocessing systems have
- (A) More than one CPU (B) Support Multitasking
 (C) Support Multithreading (D) All of the above
- j. Demand paging is a
- (A) Virtual memory management technique.
 (B) Primary memory management technique.
 (C) Contiguous memory management technique.
 (D) Cache memory management technique.

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

- Q.2** a. Write the flowchart symbols for the following operations:
- (i) Predefined process. (ii) Offline storage.
 (iii) Collate. (iv) Online storage.
 (v) Magnetic tape. (vi) Magnetic disk.
 (vii) Keyed Input. (viii) Auxiliary operation. (4)
- b. Draw a flowchart of the logical steps needed to produce a printed listing of all students over an age of 20 in a class. The input records contain the name and age of the students. Assume a sentinel value of 99 for the age field of the trailer record. (8)
- c. What are the advantages and limitations of High level languages? (4)
- Q.3** a. Write a pseudocode to convert a decimal number to binary form. (8)
- b. Define the following w.r.t. OOP languages:
 object, class, inheritance, method, abstraction, dynamic binding, code reusability,
 message. (8)

- Q.4** a. Define the following terms:
- (i) Paging.
 - (ii) Resource.
 - (iii) Throughput.
 - (iv) Real time operating systems. **(8)**
- b. Define a thread. What are the advantages of a multithreaded process compared to multiple single threaded processes? **(8)**
- Q.5** a. Differentiate between CPU bound and I/O bound jobs. Classify the following into CPU bound and I/O bound jobs and justify your answer
- (i) reading keyboard input.
 - (ii) displaying the graph.
 - (iii) computing the factorial of a number.
 - (iv) servicing an interrupt. **(7)**
- b. Differentiate between the following:
- (i) Sequential Access files and Random Access files.
 - (ii) Linked Allocation and Indexed Allocation on disks.
 - (iii) Network and Distributed operating systems. **(9)**
- Q.6** a. What is a graphics package? What are the features commonly supported by them? **(8)**
- b. With the help of an example, give the steps to create a data table and draw the bar chart for the same example in an EXCEL spreadsheet. **(8)**
- Q.7** Write a program in C-language using structures, to simulate a telephone directory. It should include the following features store, display, search, delete phone numbers. Each structure should have name of the subscriber and his 8-digit telephone number. **(16)**
- Q.8** a. What is a font? What is meant by font style and font size? Name any four popular fonts used in a text editor of a word processor. **(6)**
- b. What is the difference between do-while and while loops of a high level language? **(4)**
- c. Write steps to do the following in MS-WORD:
- (i) Insert page number in footer.
 - (ii) Insert a table in a document.
 - (iii) Insert a numbered or bulleted list in a document. **(6)**
- Q.9** Write short notes of the following:
- (i) System software.
 - (ii) Bottom up approach.
 - (iii) Data security.
 - (iv) Spooling. **(16)**

