

AMIETE – CS/IT (OLD SCHEME)

Time: 3 Hours

DECEMBER 2011

Max. Marks: 100

NOTE: There are 9 Questions in all.

- Please write your Roll No. at the space provided on each page immediately after receiving the Question Paper.
- 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. A computer cannot “boot” if it does not have the
- (A) Compiler (B) Loader
(C) Operating system (D) Assembler
- b. If you want to execute more than one program at a time, the system software you are using must be capable of:
- (A) Word Processing (B) Virtual Memory
(C) Compiling (D) Multitasking
- c. Which of the following system software does the job of merging the records from two files into one?
- (A) Security software (B) Utility program
(C) Networking software (D) Documentation system
- d. The part of the computer system which performs the housekeeping function is called
- (A) Interpreter (B) Compiler
(C) Operating system (D) Assembler
- e. A programmer, by mistake, writes an instruction to divide, instead of a multiply. Such error can be detected by a/an
- (A) Compiler (B) Interpreter
(C) Compiler or Interpreter both (D) Neither Compiler nor Interpreter

- f. Object Program is
- (A) A program written in machine language
 - (B) A program to be translated into machine language
 - (C) The translation of high level language into machine language
 - (D) None of the above
- g. What is true about assembly language?
- (A) It uses symbol codes
 - (B) It does not vary from one computer to another
 - (C) It uses binary numbers
 - (D) None of the above
- h. The table created by lexical analysis to describe all literals used in the source program
- (A) Terminal Table (B) Literal Table
 - (C) Identifier table (D) Reductions
- i. What is the name given to the organized collection of software that controls the overall operation of computer?
- (A) Working System (B) Peripheral System
 - (C) Operating System (D) Controlling System
- j. The Primary purpose of operating system is to
- (A) Make computer easier to use
 - (B) Keep system programmer employed
 - (C) Make the most efficient use of hardware
 - (D) Allow people to sue the computer

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

- Q.2** a. Explain input and output instructions in simplified instructional computer. (8)
- b. Explain how intermediate code is generated by a compiler for an arithmetic expression. (8)
- Q.3** a. Explain Process Scheduling in time sharing system. (8)
- b. Explain following symbol defining statements: (8)

```

LDS      #3
LDT      #300
LDX      #0
ADDLDP LDA ALPHA, X
ADD      BETA, X
STA      GAMMA, X
ADDR     S, X

```

Code: AC08 / AT08 Subject: SYSTEM SOFTWARE

| | | |
|-------|-------|-----|
| COMPR | X, T | |
| JLT | ADDLP | |
| . | | |
| . | | |
| . | | |
| ALPHA | RESW | 100 |
| BETA | RESW | 100 |
| GAMMA | RESW | 100 |

- Q.4** a. Discuss the problems associated with a single pass assembler. (8)
- b. Write an algorithm that executes the first pass of a linker. (8)
- Q.5** a. A self relocating program needs to find its load address before it can execute its relocating logic. Comment on how this information can be determined by the program. (8)
- b. Write the difference between compiler and interpreter. Discuss the components of an Interpreter. (8)
- Q.6** a. Explain the following terms:
 (i) Program preemption and Memory fragmentation.
 (ii) Forward reference and Intermediate representation. (4×2)
- b. What do you mean by Interrupt Processing? Explain in detail. (8)
- Q.7** a. What are the advanced macro facilities which are aimed at supporting semantic expansion? (8)
- b. Explain the addressing modes of a single pass assembler. (8)
- Q.8** a. Discuss the designing of a macro-assembler? (8)
- b. Explain User interface as a software tool. (8)
- Q.9** Write short notes on the following:
- (i) Principles of object oriented Programming.
 (ii) Local optimization.
 (iii) Dynamic Linking.
 (iv) Multipass Assembler. (4×4)