Total No. of printed pages := 7

SYSTEM PROGRAMMING

Full Marks – 70

Time – Three hours

The figures in the margin indicate full marks
for the questions.

1. Choose the correct answer :   1×10=10

   (i) A linker program

   (a) places the program in the memory for
        the purpose of execution.

   (b) relocates the program to execute from
        the specific memory area allocated to
        it.

   (c) links the program with other programs
        needed for its execution.

   (d) interfaces the program with the entities
        generating its input data.

[Turn over

(ii) Load address for the first word of the program is called

    (a) Linker address origin

    (b) Load address origin

    (c) Phase library

    (d) Absolute library.

(iii) The translator which performs macro expansion is called a

    (a) Macro processor

    (b) Macro pre-processor

    (c) Micro pre-processor

    (d) Assembler.

(iv) An assembler is

    (a) Programming language dependent

    (b) Syntax dependant

    (c) Machine dependant

    (d) Data dependant.

(v) Which of the following loader is executed when a system is first turned on or restarted

    (a) Boot loader

    (b) Compile and Go loader

    (c) Bootstrap loader

    (d) Relating loader.

(vi) Which of the following is not feature of compiler ?

    (a) Scan the entire program first and translate into machine code

    (b) To remove syntax errors

    (c) Slow for debugging

    (d) Execution time is more.

(vii) Which phase of compiler is Syntax Analysis ?

    (a) First

    (b) Second

    (c) Third

    (d) None of the mentioned above.

(viii) Semantic Analyzer is used for ?

    (a)   generating object code

    (b)   maintaining symbol table

    (c)   generating object code and maintaining symbol table

    (d)   None of the mentioned above.

(ix) A macro definition consists of

    (a)   A macro prototype statement

    (b)   One or more model statements

    (c)   Macro pre-processor statements

    (d)   All of the above.

(x) A self-relocating program is one which

    (a)   cannot be made to execute in any area of storage other than the one designated for it at the time of its coding or translation

    (b)   consists of a program and relevant information for its relocation

    (c)   can itself perform the relocation of its address sensitive portions

    (d)   All of these.

2. Fill up the blanks : $1 \times 5 = 5$

    (a) The lexical analyzer takes _____ as input and produces a stream of _____ as output.

    (b) Parsing is also known as _____.

    (c) A compiler program written in a high level language is called _____ Source Program.

    (d) A _____ statement declares the name of macro.

3. Write true or false : $1 \times 10 = 10$

    (a) A compiler can check syntax error.

    (b) Syntax Analyzer takes Groups Tokens of source program into Grammatical Production.

    (c) An assembly language is machine dependent.

    (d) Macro expansion increases the size of the program.

    (e) Macro definition is located at the start of a program.

    (f) A single pass assembler scans the program only once.

    (g) A loader is not responsible for initiating the execution process.

(h) In absolute loader no relocation information is needed.

(i) Direct linking loader is not a relocatable loader.

(j) The semantic analyzer produces an annotated syntax tree as an output.

4. Answer any *five* questions : 2×5=10

   (a) What do you mean by forward reference ?

   (b) What is program relocability ?

   (c) Define system software.

   (d) What is intermediate code ?

   (e) What is linker ?

   (f) Define dynamic loading ?

5. Answer any *five* questions : 3×5=15

   (a) Differentiate between assembly language and high level language.

   (b) What is a macro ? What are recursive macros ?

   (c) What are stacks ? How are they different from queues ?

(d) What is code optimization ? How is it beneficial ?

(e) What are the differences between one pass and two pass assemblers ?

(f) Illustrate the structure of macro.

6. Answer any *four* questions :　　　　　5×4=20

(a) Write about conditional assembly macro processor.

(b) State the different addressing modes.

(c) What are the different features of a loader ?

(d) Differentiate between macro and subroutine.

(e) Describe various loading schemes.