General Software

MODULE TEST

You may wish to review the exercises or audio-visual material before taking this module test. Once you begin the test, do not refer to the course materials.

There are five questions.

1. Match each of the following concepts with its definition by writing the correct letter in the space provided.

Concept	Definition
Source Program	____
Symbol Table	____
Assembly	____
Machine Code	____
Assembler	____
Assembly Language	____

Definitions

a. Program that translates a symbolic language program into machine code.

b. Form of a program that is executable by a computer.

c. Process of translating a symbolic language program.

d. Form of a program as it is written by a programmer.

e. Establishes the relationships between labels and actual addresses.

f. Rules that a programmer must obey in writing a program.

2. Circle the letters of the statements that describe the advantages of using assembly language rather than machine code.

   a. Faster to write.

   b. Manipulates a greater number of binary addresses.

   c. Less costly to use.

   d. Greater variation in types of programs that may be written.

   e. Easier to learn.

   f. More self-documenting.

   g. Less error prone.

3. For each of the actions listed below, place an X in the column corresponding to the assembler pass during which the action occurs. (Note that some actions may occur in more than one pass. In such cases, indicate *all* passes in which the action may occur.)

Action	Pass 1	Pass 2	Pass 3
Symbol Table			
a. The symbol table is constructed.			
b. The symbol table is printed.			
Binary Machine Code			
c. The binary machine code is generated.			
d. The binary code tape is punched.			
Assembly Listing			
e. The assembly listing is printed.			
Error Checking			
f. Duplicate labels are detected.			
g. Unresolved references are detected.			
h. Instruction syntax errors are detected.			

4. Indicate whether each of these statements is an advantage (A) of using high-level programming languages, a disadvantage (D), or neither (N) an advantage nor disadvantage by writing the correct letter in the space provided.

Statement	A, D, or N
Uses a different amount of execution time and memory space than low-level languages.	_____
Efficiency of a high-level language translator differs from that of a low-level language translator.	_____
Similarity to natural language and algebra.	_____
Uses a very specific vocabulary and grammar.	_____
Translated into assembly language, then into machine code.	_____
A high ratio of machine instruction to language statement affects program development time.	_____
Use of mnemonic variable names and syntax affects documentation.	_____
A primary purpose is to express program procedures.	_____
Translator used to handlemachine-dependent details.	_____

5. Using the instruction set below, convert the statement

   RESULT = A + B – C + D

   into equivalent assembly instructions.

   CLA
   ADD
   STR
   CMA
   IAC
   "Data"

   - As the statement would most likely be part of a larger program, a *halt* statement would *not* be inserted after the operation is coded.

   - It is *not* necessary to convert the instructions into binary machine code.

   - RESULT, A, B, C, and D are stored at successive locations beginning at location 205. Assume that the instructions for the arithmetic are to begin at location 317.

     RESULT = A + B – C + D

Location	Label	Operand
205	RESULT,	0
206	A,	1
207	B,	7
210	C,	5
211	D,	10

Location	Op Code	Operand
317		