[redacted]

rking student who completes tasks to a standard that reflects your ability. You demonstrate some
n seek assistance when required. You complete classwork and homework to a good standard.

Question
Partially c
Mark 0.50 out of 1.00

What are mnemonics used for?

- a. Machine Code
- b. Assembly Code ✔
- c. Pep/8 virtual machine
- d. Python code

Your answer is partially correct.

You have correctly selected 1.
The correct answers are:
Assembly Code,

Pep/8 virtual machine

Response history

Step	Time	Action	State	Marks
1	31/05/22, 17:22	Started	Not yet answered	
2	31/05/22, 17:23	Saved: Assembly Code	Answer saved	
3	**31/05/22, 18:38**	**Attempt finished**	**Partially correct**	**0.50**

Question **2**

Correct

Mark 2.00 out of 2.00

What is the purpose of the Operation code in the instruction format?

a. Contains a copy of the instruction being executed.

b. Says how to interpret the operand part of the instruction.

c. Specifies which register is to be used.

d. Contains the address of the next instruction to be executed.

e. Specifies which instruction is to be carried out. ✔

Your answer is correct.

The correct answer is:
Specifies which instruction is to be carried out.

Response history

Step	Time	Action	State	Marks
1	31/05/22, 17:22	Started	Not yet answered	
2	31/05/22, 17:24	Saved: Specifies which instruction is to be carried out.	Answer saved	
3	**31/05/22, 18:38**	**Attempt finished**	**Correct**	**2.00**

Question **3**

Correct

Mark 2.00 out of 2.00

Which of the following is found at the end of every Assembly program?

Select one:

- a. STOP
- b. .END
- c. Both of the above ✔
- d. None of the above

Your answer is correct.

The correct answer is: Both of the above

Response history

Step	Time	Action	State	Marks
1	31/05/22, 17:22	Started	Not yet answered	
2	31/05/22, 17:24	Saved: Both of the above	Answer saved	
3	**31/05/22, 18:38**	**Attempt finished**	**Correct**	**2.00**

Question **4**

Incorrect

Mark 0.00 out of 10.00

Assume that two memory directives allocated space for *numa* and *numb*.

Trace the following assembler code to deduce the numeric output.

```
main:   LDA     5,i
        STA     numa,d
        LDA     9,i
        STA     numb,d
        LDA     numa,d
        ADDA    3,i
        ADDA    numb,d
        ADDA    numa,d
        STA     numa,d
        SUBA    numb,d
        DECO    numa,d
        STOP
        .END
```

Here is a list of assembler instructions to help you:

Mnemonic	Operand Mode specifier	Meaning of Instruction
Stop		Stop execution
LDA	0x008B,i	Load 008B into Register A
LDA	0x008B,d	Load the contents of location 008B into Register A
STA	0x008B,d	Store the contents of Register A into location 008B
ADDA	0x008B,i	Add 008B into Register A
ADDA	0x008B,d	Add the contents of location 008B to Register A
SUBA	0x008B,i	Subtract 008B from Register A
SUBA	0x008B,d	Subtract the contents of location 008B from Register A
BR		Branch to the location specified in the operand specifier
CHARI	0x008B,d	Read a character and store it in location 008B
CHARO	0x008B,i	Write the character 8B
CHARO	0x008B,d	Write the character stored in location 008B
DECI	0x008B,d	Read a decimal number and store it in location 008B
DECO	0x008B,i	Write the decimal number 139 (8B in hex)
DECO	0x008B,d	Write the decimal number stored in location 008B

Pseudo-op	Argument	Meaning of Instruction
.ASCII	"Str\x00"	Represents a string of ASCII bytes
.BLOCK	Number of bytes	Creates a block of bytes
.WORD	Value	Creates a word and stores a value in it
.END		Signals the end of the assembly language list

Answer: 23 ✖

The correct answer is: 22

Response history

Step	Time	Action	State	Marks
1	31/05/22, 17:22	Started	Not yet answered	
2	31/05/22, 17:28	Saved: 23	Answer saved	
3	**31/05/22, 18:38**	**Attempt finished**	**Incorrect**	**0.00**

Question **5**

Correct

Mark 2.00 out of 2.00

The Instruction Format, in machine language, is broken down into two components. What are these components?

Select one:

a. Instruction operation and operation code

b. Instruction specifier and operation specifier ✔

c. Instruction specifier and register specifier

d. Addressing mode and operation code

Your answer is correct.

The correct answer is: Instruction specifier and operation specifier

Response history

Step	Time	Action	State	Marks
1	31/05/22, 17:22	Started	Not yet answered	
2	31/05/22, 17:28	Saved: Instruction specifier and operation specifier	Answer saved	
3	**31/05/22, 18:38**	**Attempt finished**	**Correct**	**2.00**

Question **6**

Correct

Mark 10.00 out of 10.00

Trace the following assembler code to deduce the numeric output. Assume a 16-bit accumulator.

```
main:   LDA     0,i
        ADDA    32768,i
        ADDA    32768,i
        STA     0x0020,d
        DECO    0x0020,d
        STOP
        .END
```

Here is a list of assembler instructions to help you:

Mnemonic	Operand Mode specifier	Meaning of Instruction
Stop		Stop execution
LDA	0x008B,i	Load 008B into Register A
LDA	0x008B,d	Load the contents of location 008B into Register A
STA	0x008B,d	Store the contents of Register A into location 008B
ADDA	0x008B,i	Add 008B into Register A
ADDA	0x008B,d	Add the contents of location 008B to Register A
SUBA	0x008B,i	Subtract 008B from Register A
SUBA	0x008B,d	Subtract the contents of location 008B from Register A
BR		Branch to the location specified in the operand specifier
CHARI	0x008B,d	Read a character and store it in location 008B
CHARO	0x008B,i	Write the character 8B
CHARO	0x008B,d	Write the character stored in location 008B
DECI	0x008B,d	Read a decimal number and store it in location 008B
DECO	0x008B,i	Write the decimal number 139 (8B in hex)
DECO	0x008B,d	Write the decimal number stored in location 008B

Pseudo-op	Argument	Meaning of Instruction
.ASCII	"Str\x00"	Represents a string of ASCII bytes
.BLOCK	Number of bytes	Creates a block of bytes
.WORD	Value	Creates a word and stores a value in it
.END		Signals the end of the assembly language list

Answer: 0 ✔

The correct answer is: 0

Response history

Step	Time	Action	State	Marks
1	31/05/22, 17:22	Started	Not yet answered	
2	31/05/22, 18:37	Saved: 0	Answer saved	
3	**31/05/22, 18:38**	**Attempt finished**	**Correct**	**10.00**

Question **7**

Correct

Mark 2.00 out of 2.00

What is the purpose of the Addressing-mode specifier in the instruction format?

a. Contains a copy of the instruction being executed.

b. Contains the address of the next instruction to be executed.

c. Specifies which register is to be used.

d. Specifies which instruction is to be carried out.

e. Says how to interpret the operand part of the instruction. ✔

Your answer is correct.

The correct answer is:
Says how to interpret the operand part of the instruction.

Response history

Step	Time	Action	State	Marks
1	31/05/22, 17:22	Started	Not yet answered	
2	31/05/22, 17:32	Saved: Says how to interpret the operand part of the instruction.	Answer saved	
3	**31/05/22, 18:38**	**Attempt finished**	**Correct**	**2.00**

Question **8**

Complete

Not graded

Given the input "Hi", What is the output of the following machine language program? The instructions are given in hexadecimal and will need to be converted to binary. Assume that the instruction specifier is 8 bits and a operation specifier of 16 bits. Remember that each hexadecimal digit gives us four binary digits because of the power relationship between them.

49 00 0D 49 00 0E 51 00 0E 51 00 0D 00 00 00 zz

You may use the following opcode table:

Opcode	Meaning of Instruction
00000	Stop execution
00001	Load the operand into the A register
00010	Store the contents of the A register into operand
00011	Add the operand to the A register
00100	Subtract the operand from the A register
11011	Character input to the operand
11100	Character output from the operand

Answer: iH

The correct answer is: iH

Response history

Step	Time	Action	State	Marks
1	31/05/22, 17:22	Started	Not yet answered	
2	31/05/22, 17:40	Saved: iH	Answer saved	
3	**31/05/22, 18:38**	**Attempt finished**	**Complete**	**0.00**

Question **9**

Correct

Mark 2.00 out of 2.00

Select all that apply:

- a. Machine language is converted to Assembly language which is understood by the computer.
- b. Assembly language is harder to understand by humans, as compared to machine language.
- c. Assembly language and Machine language are interchangeable terms.
- d. Assembly language is converted to Machine language which is understood by the computer. ✔
- e. Assembly language is a set of instructions which is the same irrespective of platform. ✔

Your answer is correct.

The correct answers are:
Assembly language is converted to Machine language which is understood by the computer.,

Assembly language is a set of instructions which is the same irrespective of platform.

Response history

Step	Time	Action	State	Marks
1	31/05/22, 17:22	Started	Not yet answered	
2	31/05/22, 17:44	Saved: Assembly language is converted to Machine language which is understood by the computer. ; Assembly language is a set of instructions which is the same irrespective of platform.	Answer saved	
3	**31/05/22, 18:38**	**Attempt finished**	**Correct**	**2.00**

Question **10**

Correct

Mark 5.00 out of 5.00

What is the meaning of the following machine language instruction? Where the first part (before the |) is the instruction specifier, and the second part is the operand specifier.

11000001 | 0000000000000111

Select one:

- a. Load the value stored in memory at position 7 into the A register ✔
- b. Load 7 into the A register
- c. Subtract the value stored in memory at position 7 from the value in the A register
- d. Subtract the value 7 from the value in the A register

Your answer is correct.

The correct answer is: Load the value stored in memory at position 7 into the A register

Response history

Step	Time	Action	State	Marks
1	31/05/22, 17:22	Started	Not yet answered	
2	31/05/22, 17:45	Saved: Load the value stored in memory at position 7 into the A register	Answer saved	
3	**31/05/22, 18:38**	**Attempt finished**	**Correct**	**5.00**

Question **11**

Correct

Mark 2.00 out of 2.00

In assembly language, what is the meaning of the mnemonic, BRLT?

a. Branch if Lower, unsigned

b. Branch if Larger Than

c. Branch if Less Than, signed ✔

d. Branch if Limit Threshold is reached

e. Branch if Equal

Your answer is correct.

The correct answer is:
Branch if Less Than, signed

Response history

Step	Time	Action	State	Marks
1	31/05/22, 17:22	Started	Not yet answered	
2	31/05/22, 17:48	Saved: Branch if Less Than, signed	Answer saved	
3	**31/05/22, 18:38**	**Attempt finished**	**Correct**	**2.00**

Question **12**

Correct

Mark 2.00 out of 2.00

When writing a program in assembly, the programmer can give certain instructions to the assembler using what is sometimes called a pseudo-operation. What is another name for these instructions that is more specific to assembly?

Select one:

- a. Compiler directives
- b. Assembler directives ✔
- c. Compiler specific instructions
- d. Assembler exclusives

Your answer is correct.

The correct answer is: Assembler directives

Response history

Step	Time	Action	State	Marks
1	31/05/22, 17:22	Started	Not yet answered	
2	31/05/22, 17:49	Saved: Assembler directives	Answer saved	
3	**31/05/22, 18:38**	**Attempt finished**	**Correct**	**2.00**

Question **13**

Correct

Mark 2.00 out of 2.00

Which of the following Mnemonics could be used to help simulate a loop structure in Assembly code

Select one:

- a. ADDA
- b. LPA
- c. LOOPA
- d. STA
- e. DECI
- f. BR ✔
- g. LDA
- h. SUBA

Your answer is correct.

The correct answer is: BR

Response history

Step	Time	Action	State	Marks
1	31/05/22, 17:22	Started	Not yet answered	
2	31/05/22, 17:50	Saved: BR	Answer saved	
3	**31/05/22, 18:38**	**Attempt finished**	**Correct**	**2.00**

Question **14**

Correct

Mark 2.00 out of 2.00

Which of the following is the lowest-level programming language compared to the others?

Select one:

- a. Python
- b. Machine language ✔
- c. C++
- d. MATLAB

Your answer is correct.

The correct answer is: Machine language

Response history

Step	Time	Action	State	Marks
1	31/05/22, 17:22	Started	Not yet answered	
2	31/05/22, 17:50	Saved: Machine language	Answer saved	
3	**31/05/22, 18:38**	**Attempt finished**	**Correct**	**2.00**

Question **15**

Correct

Mark 1.00 out of 1.00

Directives which are the hints using some predefined alphabetical strings (eg. ".BLOCK") are given to which parts of the system:

a. memory

b. processor and assembler

c. processor

d. assembler ✔

Your answer is correct.

The correct answer is:
assembler

Response history

Step	Time	Action	State	Marks
1	31/05/22, 17:22	Started	Not yet answered	
2	31/05/22, 18:18	Saved: assembler	Answer saved	
3	**31/05/22, 18:38**	**Attempt finished**	**Correct**	**1.00**

Question **16**

Complete

Not graded

What is the output of the following machine language program? The instructions are given in hexadecimal and will need to be converted to binary. Assume that the instruction specifier is 8 bits and a operation specifier of 16 bits. Remember that each hexadecimal digit gives us four binary digits because of the power relationship between them.

C0 00 06 70 00 07 E1 00 06 70 00 02 71 00 06 E1 00 06 39 00 06 zz

You may use the following opcode table:

Opcode	Meaning of Instruction
00000	Stop execution
00001	Load the operand into the A register
00010	Store the contents of the A register into operand
00011	Add the operand to the A register
00100	Subtract the operand from the A register
11011	Character input to the operand
11100	Character output from the operand

Answer: 28

The correct answer is: 28

Response history

Step	Time	Action	State	Marks
1	31/05/22, 17:22	Started	Not yet answered	
2	31/05/22, 18:16	Saved: 28	Answer saved	
3	**31/05/22, 18:38**	**Attempt finished**	**Complete**	**0.00**

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