

Dashboa

guage

Co

ou are a student, who takes full responsibility for your learning. A reflective learner, who recognises areas for development and is committed to personal improvement. An organised learner who always completes class work and homework to a very high standard.

Question 1

Correct

Mark 2.00 out of 2.00

Match the following Pep8 opcodes to their correct meaning

0000	Stop Execution	✓
1110	Store the contents of the A register into operand	✓
0111	Add the operand to the A-register	✓
01010	Character output from the operand	✓

Your answer is correct.

The correct answer is: 0000 → Stop Execution, 1110 → Store the contents of the A register into operand, 0111 → Add the operand to the A-register, 01010 → Character output from the operand

Response history

Step	Time	Action	State	Marks
1	29/05/22, 16:42	Started	Not yet answered	
2	29/05/22, 16:44	Saved: 0000 -> Stop Execution; 1110 -> Store the contents of the A register into operand; 0111 -> Add the operand to the A-register; 01010 -> Character output from the operand	Answer saved	
3	29/05/22, 18:17	Attempt finished	Correct	2.00

Question 2

Correct

Mark 1.00 out of 1.00

When the data for an instruction is too large to fit in the immediate operand what is true in the following statements (Select all that apply):

- ☐ a. The instruction will use Immediate mode addressing
- ☒ b. The data will be stored elsewhere with a reference of the data being stored in the operand ✓
- ☒ c. The instruction will use Direct mode addressing ✓
- ☐ d. The data pertaining to the instruction will stored in the operand, with excess bits being ignored

Your answer is correct.

The correct answers are:

The data will be stored elsewhere with a reference of the data being stored in the operand,

The instruction will use Direct mode addressing

Response history

Step	Time	Action	State	Marks
1	29/05/22, 16:42	Started	Not yet answered	
2	29/05/22, 17:57	Saved: The data will be stored elsewhere with a reference of the data being stored in the operand ; The instruction will use Direct mode addressing	Answer saved	
3	29/05/22, 18:17	Attempt finished	Correct	1.00

Question 3

Correct

Mark 1.00 out of 1.00

If a user would like to display predefined messages with the use of an ascii table, which instructions would he use from the opcode table (Select all that apply):

- ☐ a. Add the operand to the A register
- ☐ b. Subtract the operand from the A register
- ☒ c. Stop Execution ✓
- ☐ d. Character input to the operand
- ☐ e. Load Operand into the A register
- ☒ f. Character output from the operand ✓

Your answer is correct.

The correct answers are:

Stop Execution,

Character output from the operand

Response history

Step	Time	Action	State	Marks
1	29/05/22, 16:42	Started	Not yet answered	
2	29/05/22, 16:48	Saved: Stop Execution ; Character output from the operand	Answer saved	
3	29/05/22, 18:17	Attempt finished	Correct	1.00

Question 4

Correct

Mark 1.00 out of 1.00

In Pep/8 there is a memory unit, how many bits of capacity does this memory unit have?

- ☒ a. 524288 ✓
- ☐ b. 524287
- ☐ c. 65536
- ☐ d. 16
- ☐ e. 65535

Your answer is correct.

The correct answer is:

524288

Response history

Step	Time	Action	State	Marks
1	29/05/22, 16:42	Started	Not yet answered	
2	29/05/22, 16:48	Saved: 65536	Answer saved	
3	29/05/22, 18:06	Saved: 524288	Answer saved	
4	29/05/22, 18:17	Attempt finished	Correct	1.00

Question 5

Correct

Mark 2.00 out of 2.00

Which of the following is true about addressing modes?

- ☒ a. In immediate mode addressing, the operand is part of the instruction. ✓
- ☐ b. Direct mode addressing is comparatively faster than immediate mode. addressing.
- ☐ c. In direct mode addressing, the operand is part of the instruction.
- ☐ d. Immediate mode addressing is also known as indirect mode addressing.

Your answer is correct.

The correct answer is:

In immediate mode addressing, the operand is part of the instruction.

Response history

Step	Time	Action	State	Marks
1	29/05/22, 16:42	Started	Not yet answered	
2	29/05/22, 16:49	Saved: In immediate mode addressing, the operand is part of the instruction.	Answer saved	
3	29/05/22, 18:17	Attempt finished	Correct	2.00

Question 6

Correct

Mark 2.00 out of 2.00

Which of the following "contains a copy of the instruction being executed"?

- ☐ a. Program counter
- ☒ b. Instruction register ✓
- ☐ c. Status Bit Z
- ☐ d. Status Bit N
- ☐ e. Accumulator

Your answer is correct.

The correct answer is:
Instruction register

Response history

Step	Time	Action	State	Marks
1	29/05/22, 16:42	Started	Not yet answered	
2	29/05/22, 16:50	Saved: Instruction register	Answer saved	
3	29/05/22, 18:17	Attempt finished	Correct	2.00

Question 7

Correct

Mark 2.00 out of 2.00

You are given the following ASCII table and the following set of sample Pep8 instructions. Use this information to answer this question.

Opcode	Meaning of Instruction
0000	Stop execution
1100	Load the operand into the A register
1110	Store the contents of the A register into operand
0111	Add the operator to the A register
1000	Subtract the operand from the A register
01001	Character input to the operand
01010	Character output from the operand

What is the output of the following Pep8 program?

```
"50 00 41 50 00 62 50 00 6A 50 00 65 50 00 63 50 00 74 zz"
```

- ☐ a. "Abjure"
- ☐ b. "Abide"
- ☐ c. "Abjectly"
- ☐ d. "Ability"
- ☒ e. "Abject" ✓

Your answer is correct.

The correct answer is:

"Abject"

Response history

Step	Time	Action	State	Marks
1	29/05/22, 16:42	Started	Not yet answered	
2	29/05/22, 17:28	Saved: "Abject"	Answer saved	
3	29/05/22, 18:17	Attempt finished	Correct	2.00

Question 8

Correct

Mark 2.00 out of 2.00

What is the purpose of an assembler?

- ☒ a. It converts assembly language to machine language. ✓
- ☐ b. It converts machine language to assembly language.
- ☐ c. It converts high-level languages into assembler code.
- ☐ d. It is not used in modern-day computers.

Your answer is correct.

The correct answer is:

It converts assembly language to machine language.

Response history

Step	Time	Action	State	Marks
1	29/05/22, 16:42	Started	Not yet answered	
2	29/05/22, 17:29	Saved: It converts assembly language to machine language.	Answer saved	
3	29/05/22, 18:17	Attempt finished	Correct	2.00

Question 9

Correct

Mark 2.00 out of 2.00

What is the purpose of the Register Specifier in the instruction format?

- ☐ a. Contains a copy of the instruction being executed.
- ☐ b. Specifies which instruction is to be carried out.
- ☐ c. Indicates how to interpret the operand part of the instruction.
- ☒ d. Specifies which register is to be used. ✓
- ☐ e. Contains the address of the next instruction to be executed.

Your answer is correct.

The correct answer is:

Specifies which register is to be used.

Response history

Step	Time	Action	State	Marks
1	29/05/22, 16:42	Started	Not yet answered	
2	29/05/22, 16:55	Saved: Specifies which register is to be used.	Answer saved	
3	29/05/22, 18:17	Attempt finished	Correct	2.00

Question **10**

Correct

Mark 2.00 out of 2.00

In order for a computer to understand a programme:

- ☐ a. the programme must be written in C++.
- ☐ b. machine learning is typically be used to translate the high-level level programme to a language that the computer understands.
- ☒ c. the programme must be translated to machine code. ✓
- ☐ d. nothing has to be translated, because computers directly understand high-level programmes.

Your answer is correct.

The correct answer is: the programme must be translated to machine code.

Response history

Step	Time	Action	State	Marks
1	29/05/22, 16:42	Started	Not yet answered	
2	29/05/22, 16:56	Saved: the programme must be translated to machine code.	Answer saved	
3	29/05/22, 18:17	Attempt finished	Correct	2.00

Question **11**
Correct
Mark 2.00 out of 2.00

What is the address of the data this instruction is pointing to? (Give your answer in binary, no spaces)
49003F

Answer: ✓

The correct answer is: 111111

Response history				
Step	Time	Action	State	Marks
1	29/05/22, 16:42	Started	Not yet answered	
2	29/05/22, 17:00	Saved: 010010010000000000111111	Answer saved	
3	29/05/22, 17:13	Saved: 000000111111	Answer saved	
4	29/05/22, 18:17	Attempt finished	Correct	2.00

Question **12**

Correct

Mark 2.00 out of 2.00

What is the value of the data of this instruction? (Give your answer in binary, no spaces)

503F3F

Answer:

0011111100111111

✓

The correct answer is: 11111100111111

Response history

Step	Time	Action	State	Marks
1	29/05/22, 16:42	Started	Not yet answered	
2	29/05/22, 17:04	Saved: 010100000011111100111111	Answer saved	
3	29/05/22, 17:14	Saved: 0011111100111111	Answer saved	
4	29/05/22, 18:17	Attempt finished	Correct	2.00

Question **13**

Incorrect

Mark 0.00 out of 2.00

What is the value of the opcode for this instruction? (Give your answer in binary, no spaces)

710012

Answer: ❌

The correct answer is: 1110

Response history

Step	Time	Action	State	Marks
1	29/05/22, 16:42	Started	Not yet answered	
2	29/05/22, 17:07	Saved: 01110001000000000010010	Answer saved	
3	29/05/22, 17:15	Saved: 0111	Answer saved	
4	29/05/22, 18:17	Attempt finished	Incorrect	0.00

Question **14**

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	29/05/22, 16:42	Started	Not yet answered	
2	29/05/22, 17:07	Saved: Addressing mode and operation code	Answer saved	
3	29/05/22, 18:12	Saved: Instruction specifier and operation specifier	Answer saved	
4	29/05/22, 18:17	Attempt finished	Correct	2.00

Question **15**

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. C++
- ☒ c. Machine language ✓
- ☐ d. MATLAB

Your answer is correct.

The correct answer is: Machine language

Response history

Step	Time	Action	State	Marks
1	29/05/22, 16:42	Started	Not yet answered	
2	29/05/22, 17:07	Saved: Machine language	Answer saved	
3	29/05/22, 18:17	Attempt finished	Correct	2.00

Question 16

Correct

Mark 8.00 out of 8.00

Pretend to be a processor with a 16-bit A-register; 8-bit instruction specifier; and 16-bit operand specifier.

Consider the set of machine language instructions below:

49002F

490031

510031

51002F

00

(a) Convert each instruction into binary (no spaces).

49002F



490031



510031



51002F



00



(b) What type of addressing is used in each instruction?

49002F



490031



510031



51002F



00

(c) What will be the output if you read in **XY**?



OPCODE	Meaning of Instruction
0000	STOP execution
1100	LOAD the operand into the A-register
1110	STORE the A-register into the operand
0111	ADD the operand to the A-register
1000	SUBTRACT the operand from the A-register
01001	Character INPUT to the operand
01010	Character OUTPUT from the operand
00110	Decimal INPUT to the operand
00111	Decimal OUTPUT from the operand

Response history

Step	Time	Action	State	Marks
1	29/05/22, 16:42	Started	Not yet answered	
2	29/05/22, 17:22	Saved: part 1: 010010010000000000101111; part 2: 010010010000000000110001; part 3: 010100010000000000110001; part 4: 010100010000000000101111; part 5: 00000000; part 6: Direct-mode addressing; part 7: Direct-mode addressing; part 8: Direct-mode addressing; part 9: Direct-mode addressing; part 10:	Incomplete answer	
3	29/05/22, 17:31	Saved: part 1: 010010010000000000101111; part 2: 010010010000000000110001; part 3: 010100010000000000110001; part 4: 010100010000000000101111; part 5: 00000000; part 6: Direct-mode addressing; part 7: Direct-mode addressing; part 8: Direct-mode addressing; part 9: Direct-mode addressing; part 10: X	Answer saved	
4	29/05/22, 18:15	Saved: part 1: 010010010000000000101111; part 2: 010010010000000000110001; part 3: 010100010000000000110001; part 4: 010100010000000000101111; part 5: 00000000; part 6: Direct-mode addressing; part 7: Direct-mode addressing; part 8: Direct-mode addressing; part 9: Direct-mode addressing; part 10: YX	Answer saved	
5	29/05/22, 18:17	Attempt finished	Correct	8.00

Question **17**

Correct

Mark 10.00 out of 10.00

Suppose that you have an A-register of 16 bits; an instruction register of 8 bits; and an operand specifier of 16 bits.

What is the output of the following machine code program?

C0 00 00 70 80 00 70 80 00 E1 00 20 39 00 20 00 00 00

You may use the following Operation Code table:

OPCODE	Meaning of Instruction
0000	STOP execution
1100	LOAD the operand into the A-register
1110	STORE the A-register into the operand
0111	ADD the operand to the A-register
1000	SUBTRACT the operand from the A-register
01001	Character INPUT to the operand
01010	Character OUTPUT from the operand
00110	Decimal INPUT to the operand
00111	Decimal OUTPUT from the operand

Answer:



The correct answer is: 0

Response history

Step	Time	Action	State	Marks
1	29/05/22, 16:42	Started	Not yet answered	
2	29/05/22, 17:32	Saved: 0	Answer saved	
3	29/05/22, 18:17	Attempt finished	Correct	10.00

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