Answer Sheet: The Fetch-Execute Cycle Worksheet

# Activity 1: Fill in the Gaps - Answers

1. The \*\*Program Counter\*\* holds the address of the next instruction to be fetched.

2. This address is copied to the \*\*Memory Address Register\*\*.

3. The instruction at the address is fetched into the \*\*Memory Data Register\*\*.

4. The \*\*Control Unit\*\* decodes the instruction and determines the operation to perform.

5. If it’s a calculation, the \*\*ALU\*\* performs the operation.

6. The result is stored in the \*\*Accumulator\*\*.

# Activity 2: Instruction Sorting - Answers

1. The PC tells the CPU where to fetch from.

2. The address is copied to the MAR.

3. The instruction at the address is fetched into the MDR.

4. The CU decodes the instruction.

5. The ALU performs the calculation (if needed).

6. The result is stored in the Accumulator.

# Activity 3: Short Answer Questions - Sample Answers

1. The Program Counter (PC) keeps track of the address of the next instruction to be executed.

2. The Control Unit decodes the instruction in the MDR and determines what operation the CPU should carry out.

3. The ALU performs any arithmetic or logic operations required by the instruction.

4. The MAR stores the address of the memory location to be accessed, while the MDR stores the actual data being transferred to or from that location.