Formative assessment   Name_____
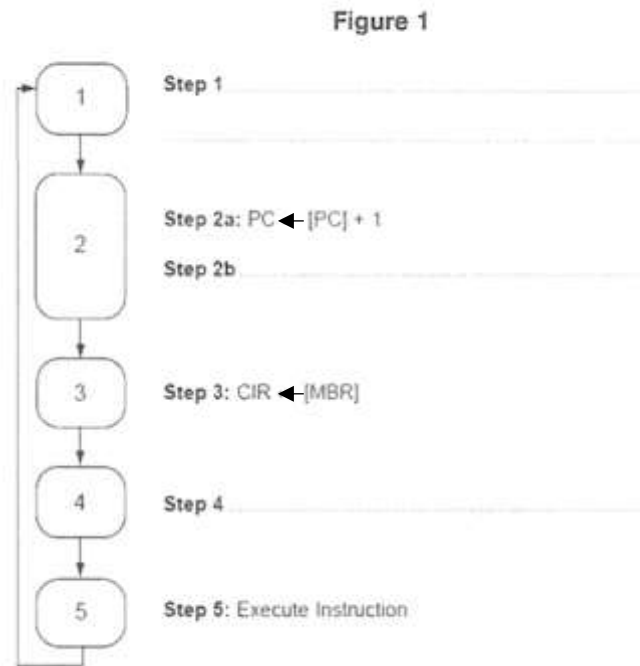
1 (a) State the full names of two of the special purpose registers that are used in the fetch part
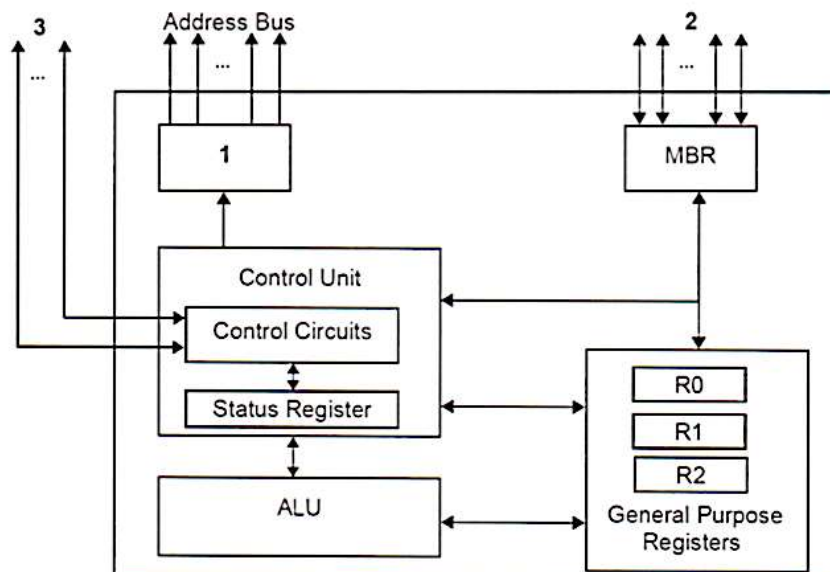of the fetch-execute cycle.
Register 1 ....
Register 2 .... [2]

(b) Figure 1 below is an incomplete diagram of the fetch-execute cycle.
Describe the missing steps 1, 2b and 4 using either register transfer notation or written
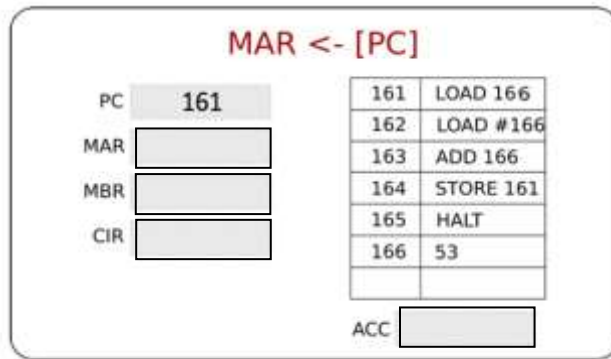description. 2 Steps 2a and 2b occur at the same time.   [3]

Figure 1

Step 1 ....

Step 2a: PC ← [PC] + 1

Step 2b ....

Step 3: CIR ← [MBR]

Step 4 ....

Step 5: Execute Instruction

2) Figure 2 below shows an incomplete diagram of the components of a processor.

Provide full names for the components numbered 1 to 3 in Figure 2 by completing the table
below.

Component Number	Component Name
1	
2	
3	

3) Complete the following diagrams showing each step of the fetch decode execute cycle. Draw the necessary buses

MAR <- [PC]

PC	161
MAR	
MBR	
CIR	

161	LOAD 166
162	LOAD #166
163	ADD 166
164	STORE 161
165	HALT
166	53

| ACC | |

4) Write an assembly language program C = (num1 - num2) + num3;