**Task 3**

a - the content of $t0=182 ,$t1=166 ,$t2=8 ,$t3=1

b - the last element of array A will change from 10 to 8 ,and it contains the values 3 to 9 in ascending order followed by the value 8 ..

array B contains the value 8 followed by the value 9 to 3 in descending order

c - the total of instructions = 4+ 6\*8= 52 instructions

d - correspond to accessing array using POINTERS

**Task 4**

L\_1 lw $t2, 60($t1) No dependencies b/c no previous instructions

L\_2 lw $t1, 40($t2) WAR on t1 re: L\_1, RAW on t2 re: L\_1

L\_3 slt $t1, $t1, $t2 WAR on t1 re: L\_1, RAW on t2 re: L\_1

WAW on t1 re: L\_2, RAR on t2 re: L\_2 (not required)

RAW on t1 re: L\_2

L\_4 sw $t1, 20($t2) RAW on t2 re: L\_1 RAW on t1 re: L\_2 and L\_3

RAR on t2 re: L\_2 (not required)

RAR on t2 re: L\_2 (not required)

**Task 5**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Field |  | Value |  | Value |
| Read  Data 1 | Before  ID/EX | **117** | Write data | **99** |
|  | After  ID/EX | **110** | RegWrite | **1** |
| Read  Data 2 | Before  ID/EX | **118** | MemWrite | **0** |
|  | After  ID/EX | **111** | MemToReg | **1** |