**4.46**

A. 没有正确描述指令popq %rsp。该段代码序列使%rsp的值为(%rsp)+8，而指令popq%rsp执行后，%rsp的值应为(%rsp)。

B. 改写代码序列：

addq $8 , %rsp

movq-8(%rsp) , REG

**4.51**

|  |  |
| --- | --- |
| 阶段 | iaddq V, rB |
| 取址 | icode:ifun <- M1 [PC]  rA:rB <- M1[PC+1]  valC <- M8[PC+2]  valP <- PC+10 |
| 译码 | valB <- R[rB] |
| 执行 | valE <- valC + valB |
| 访存 | 无 |
| 写回 | R[rB] <- valE |
| 更新PC | PC <- valP |

**5.14**

/\* Inner product. Accumulate in temporary \*/

void inner5(vec\_ptr u, vec\_ptr v, data\_t\* dest) {

long i;

long length = vec\_length(u);

long limit = length - 5;

data\_t\* udata = get\_ver\_start(u);

data\_t\* vdata = get\_vec\_start(v);

data\_t sum = (data\_t)0;

for (i = 0; i < limit; i += 6) {

sum = sum + udata[i] \* vdata[i] +

udata[i + 1] \* vdata[i + 1] +

udata[i + 2] \* vdata[i + 2] +

udata[i + 3] \* vdata[i + 3] +

udata[i + 4] \* vdata[i + 4] +

udata[i + 5] \* vdata[i + 5];

}

for (; i < length; i++) {

sum = sum + udata[i] \* vdata[i];

}

\*dest = sum;

}