Compilation of and and or

```
C(e_1 \text{ and } e_2) \stackrel{\text{def}}{=} C(e_1)
                      call P test
                      testq %rax, %rax
                      jz L_skip
                      C(e_2)
       L skip:
C(e_1 \text{ or } e_2) \stackrel{\text{def}}{=} C(e_1)
                     call P_test
                    testq %rax, %rax
                     jnz L_skip
                    C(e_2)
      L skip:
```

where L_skip is a new label.

Compilation of if-else Instruction

```
C(	ext{if } (e) : s_1 	ext{ else} : s_2) \stackrel{	ext{def}}{=} C(e_1) call P_test testq %rax, %rax jz L_else C(s_1) jmp L_end L_else: C(s_2) L_end:
```

where L_else and L_end are new labels.

Compilation of Equality Operation

```
C(e_1 == e_2) \stackrel{\text{def}}{=} C(e_1)
                pushq %rdi
                 C(e_2)
                movq %rdi, %rsi
                popq %rdi
                 call P_equal
                 testq %rax, %rax
                 sete %al
                movq $C_True, %rdi
                 movq $C_False, %rsi
                 testb %al, %al
                 cmovz %rsi, %rdi
```