1.

1. A b – c + \*
2. A not C D not or not or
3. A b c d e / + \* +
4. A B and C not D or or
5. a – b c – d + \* +
6. A B or C D not E and or and
7. x y + z \* a b + c 🡩 a b c 🡩 🡩

2.

-(a+b)\*(c+d)-(a+b+c)

1）三元式：

|  |  |  |  |
| --- | --- | --- | --- |
|  | OP | ARG1 | ARG2 |
| (1) | + | a | b |
| (2) | + | c | d |
| (3) | \* | (1) | (2) |
| (4) | - | (3) |  |
| (5) | + | a | b |
| (6) | + | (5) | c |
| (7) | - | (4) | (6) |

2）间接三元式：

三元式表：

|  |  |  |  |
| --- | --- | --- | --- |
|  | OP | ARG1 | ARG2 |
| (1) | + | a | b |
| (2) | + | c | d |
| (3) | \* | (1) | (2) |
| (4) | - | (3) |  |
| (5) | + | (1) | c |
| (6) | - | (4) | (5) |

间接代码：

(1)

(2)

(3)

(4)

(1)

(5)

(6)

3）四元式：

|  |  |  |  |
| --- | --- | --- | --- |
| + | a | b |  |
| + | c | d |  |
| \* |  |  |  |
| - |  |  |  |
| + | a | b |  |
| + |  | c |  |
| - |  |  |  |

4.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 步骤 | 符号栈 | 输入符号串 | 动作 | 语义值 | 产生式 | 三地址代码 |
| 0 | # | A:=B\*(-C+D)# |  |  |  |  |
| 1 | #id | :=B\*(-C+D)# | 移进 | A |  |  |
| 2 | #id:= | B\*(-C+D)# | 移进 | A\_ |  |  |
| 3 | #id:=id | \*(-C+D)# | 移进 | A\_B |  |  |
| 4 | #id:=E | \*(-C+D)# | 规约 | A\_B | E🡪id |  |
| 5 | #id:=E\* | (-C+D)# | 移进 | A\_B\_ |  |  |
| 6 | #id:=E\*( | -C+D)# | 移进 | A\_B\_ \_ |  |  |
| 7 | #id:=E\*(- | C+D)# | 移进 | A\_B\_ \_ |  |  |
| 8 | #id:=E\*(-id | +D)# | 移进 | A\_B\_ \_ \_C |  |  |
| 9 | #id:=E\*(-E | +D)# | 规约 | A\_B\_ \_ \_C | E🡪id |  |
| 10 | #id:=E\*(E | +D)# | 规约 | A\_B\_ \_ | E🡪-E |  |
| 11 | #id:=E\*(E+ | D)# | 移进 | A\_B\_ \_\_ |  |  |
| 12 | #id:=E\*(E+id | )# | 移进 | A\_B\_ \_\_D |  |  |
| 13 | #id:=E\*(E+E | )# | 规约 | A\_B \_ \_\_D | E🡪id |  |
| 14 | #id:=E\*(E | )# | 规约 | A\_B\_ \_ | E🡪E+E |  |
| 15 | #id:=E\*(E) | # | 移进 | A\_B\_ \_\_ |  |  |
| 16 | #id:=E\*E | # | 规约 | A\_B\_ | E🡪(E) |  |
| 17 | #id:=E | # | 规约 | A\_ | E🡪E\*E |  |
| 18 | #S | # | 规约 |  | S🡪id:=E | A:= |

5.

设A,B：10\*20 C,D:20 w=4

7.

|  |  |
| --- | --- |
| 序号 | 四元式 |
| 100 | (j<,A,C,102) |
| 101 | (j,\_,\_,115) |
| 102 | (j<,B,D,104) |
| 103 | (j,\_, \_,115) |
| 104 | (j=,A,1,106) |
| 105 | (j,\_, \_,109) |
| 106 | (+,C,1,) |
| 107 | (:=,,\_,C) |
| 108 | (j,\_,\_,100) |
| 109 | (j<=,A,D,111) |
| 110 | (j,\_,\_,100) |
| 111 | (+,A,2,) |
| 112 | (:=,,\_,A) |
| 113 | (j,\_,\_,109) |
| 114 | (j,\_,\_,100) |
| 115 | … |

11.

属性文法：

S🡪for (;;)

翻译模式：

|  |  |
| --- | --- |
| 产生式 | 语义动作 |
|  | } |
|  |  |
|  |  |
|  | ; |

15.

|  |  |
| --- | --- |
| 产生式 | 语义动作 |
|  |  |
|  |  |
|  |  |
|  | } |
|  | } |
|  | } |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |