Compiler Design Continuous Assessment 2

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20181CSE0621

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- 7CSE8

- ○ 7CSE9
- ◉ 7CSE10
- ○ 7CSE11
- ○ 7CSE12
- ○ 7CSE13

4. Let a denote an integer array of size 5 and let c and i be integers. Assuming that the width of an integer is 2. Select the appropriate three address code for the expression c+a[i] *
(2 Points)

- ☑ t1=i*2, t2=a+t1, t3=c+t2
- ☐ t1=i*4, t2=a+t1, t3=c+t2
- ☐ t1=i*8, t2=a+t1, t3=c+t2
- ☐ t1=i*12, t2=a+t1, t3=c+t2

5. S->CD S.m=f(C.m,D.m) *
(2 Points)

- ☑ Synthesized attribute
- ☐ Inherited attribute
- ☐ both synthesized and inherited attribute
- ☐ none of the above

6. Which of the following statement is false with respect to intemediate code generation *
(2 Points)

- ☐ Using quadruple notation, the location for each temporary varible can be accessed immediately via the symbol table
- ☐ The benefit of quadruples appears in optimising the compiler
- ☐ indirect triples and quadruples require about the same amount of space and are equally efficient in reordering of code

- [x] Indirect triples and quadruples require different amount of space and are not efficient in reordering of code

7. Consider the following code fragment:

```
if(a<b)
  z=x*2;
else
  y=10;
g=x*2;
```

Which of following optimization techniques ***can't*** be applied on the given code: * (2 Points)

- ( ) Code Motion
- ( ) Copy Propagation
- ( ) Strength Reduction
- (•) All of the above

8. Consider the following string:

a#bcd#e#f

- **$** has higher precedence than **#**
- **$** is left-associative

is right-associative

What will be the depth of the Syntax Tree constructed for the above string?
Note: Root node is at depth 0 * (2 Points)

- ( ) 3
- ( ) 4
- (•) 5

- ◯ 6

9. *stmt* → **if** *expr* **then** *expr* **else**

   expr ; stmt | *ε*

   expr → *term* **relop** *term* | *term*

   term → *id* | *number*

   id → **a** | **b** | **c**

   number → **0** | **1** | **2** | **3** | **4** | **5**| **6** | **7** | **8** | **9**

   If program has 10 **if** terminals, then how many control flow paths will be there?

   Note: **if** *e1* **then** *e2* **else** *e3* has 2 control paths

   e1→e2 and e1→e3 *

   (2 Points)

   - ◯ 10
   - ◯ 20
   - ◉ 2^10
   - ◯ 2^20

10. _____ is a tool that depicts the structure of basic blocks, helps to see the flow of values flowing among the basic blocks, and offers optimization too *
    (2 Points)

    - ◉ DAG
    - ◯ CAG
    - ◯ SAG
    - ◯ PAG

11. Peephole optimization is form of *
    (2 Points)

- ○ Loop optimization
- ◉ Local optimization
- ○ Constant folding
- ○ Data flow analysis

12. Dead code plays no role in any program operation and therefore it can simply be eliminated. *

(2 Points)

- ◉ TRUE
- ○ FALSE
- ○ Can be true or false
- ○ Can not say

13. Syntax Directed Translation is_____ *

(2 Points)

- ○ Grammar
- ○ Semantics rules
- ◉ a & b
- ○ none of the above

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