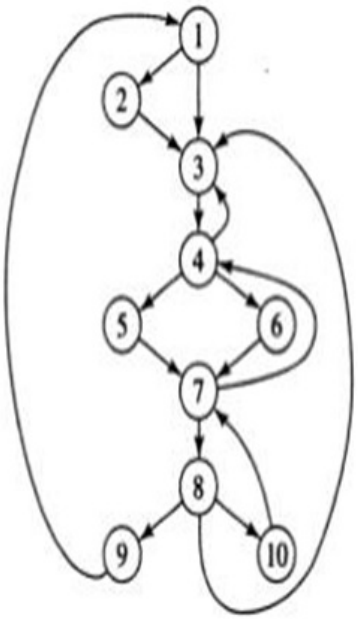
Started on	Monday, 16 November 2020, 11:17 AM
State	Finished
Completed on	Monday, 16 November 2020, 12:00 PM
Time taken	42 mins 47 secs
Grade	**21.50** out of 30.00 (**72**%)

Question 1

Correct

Mark 1.00 out of 1.00

For the given flowgraph, compute D(6)-Dominators of node 6:



a. D(6)={1,3,4,5,6}

b. D(6)={1,2,3,4,6}

c. D(6)={1,2,3,4,5,6}

d. D(6)={1,3,4,6} ✔

Your answer is correct.

The correct answer is:

D(6)={1,3,4,6}

Question 2

Incorrect

Mark 0.00 out of 1.00

Calculate the cost of: 1)MOV b, R0 2) ADD 5,R0

- a. 2
- b. 6 ✖
- c. 4
- d. 3

Your answer is incorrect.

The correct answer is:
4

Question 3

Incorrect

Mark 0.00 out of 1.00

Intermediate code is taken as input and is converted into the target machine's instructions set by the _____

- a. Code Optimizer
- b. Code Generator
- c. Parser
- d. Intermediate Code Generator ✖

Your answer is incorrect.

The correct answer is:
Code Generator

Question 4

Correct

Mark 1.00 out of 1.00

The instruction **MOV 4(R0),M** stores _____ into memory location M.

- a. contents(4+contents(R0)) ✔
- b. contents(R0)
- c. contents(4*contents(R0))
- d. All the given options

Your answer is correct.

The correct answer is:
contents(4+contents(R0))

Question 5

Partially correct

Mark 0.50 out of 1.00

Match the following:

IN[B]	set of definitions outside of B that define identifiers that also have definition within B.	✖
GEN[B]	set of generated definitions within block B.	✔
OUT[B]	set of definitions reaching the point just after the last statement of B	✔
KILL[B]	set of definitions reaching the point just after the last statement of B	✖

Your answer is partially correct.

You have correctly selected 2.
The correct answer is:
IN[B] → set of all definition reaching the point just before the first statement of block B.,

GEN[B] → set of generated definitions within block B.,

OUT[B] → set of definitions reaching the point just after the last statement of B,

KILL[B] → set of definitions outside of B that define identifiers that also have definition within B.

Question 6

Correct

Mark 1.00 out of 1.00

An unlabeled instruction immediately following an unconditional jump is called _____

- a. Always reachable code
- b. Frequently reachable code
- c. Unreachable code ✔
- d. Executable code

Your answer is correct.

The correct answer is:
Unreachable code

Question 7

Correct

Mark 1.00 out of 1.00

Consider the code, x=a+b, where x is never used in the program,represents:

- a. Induction Variable code
- b. Dead code ✔
- c. Loop invariant code
- d. All the options

Your answer is correct.

The correct answer is:
Dead code

Question 8

Incorrect

Mark 0.00 out of 1.00

Choose the correct statement from the following

a. Use(x,B) is always equal to 0

b. Use(x,B) is always equal to 1 ✖

c. Use(x,B) is the number of times x is used in B prior to any definition of x

d. Use(x,B) is the number of times x is used in a loop

Your answer is incorrect.

The correct answer is:
Use(x,B) is the number of times x is used in B prior to any definition of x

Question 9

Correct

Mark 1.00 out of 1.00

_____are hardware instructions to implement specific operations efficiently.

a. Use Definition Chain

b. Usage Count

c. Machine Idioms ✔

d. Next Use Information

Your answer is correct.

The correct answer is:
Machine Idioms

Question 10

Correct

Mark 1.00 out of 1.00

Replacement of run-time computation by compile-time computation is called:

a. Peephole optimization

b. Reduction in strength

c. Copy propagation

d. Constant folding ✔

Your answer is correct.

The correct answer is:
Constant folding

Question 11

Correct

Mark 1.00 out of 1.00

Choose the correct statement from the following:

1.Local optimization-Transformations that are applied to small blocks of statements.

2.Global optimization-Transformations that are applied to large program segments that includes functions, procedures and loops.

a. Statement 2 is correct

b. Statement 1 & 2 are incorrect

c. Statement 1 is correct

d. Statement 1 & 2 are correct ✔

Your answer is correct.

The correct answer is:
Statement 1 & 2 are correct

Question 12

Incorrect

Mark 0.00 out of 1.00

Instructions involving _____ are usually faster than those involving other operands.

- a. Cache memory ✖
- b. Register
- c. Memory
- d. All the options

Your answer is incorrect.

The correct answer is:
Register

Question 13

Correct

Mark 1.00 out of 1.00

_____ is an optimization technique performed on a small set of compiler-generated instructions.

- a. Peephole optimization ✔
- b. Global Optimization
- c. Local Optimization
- d. Algorithm Optimization

Your answer is correct.

The correct answer is:
Peephole optimization

Question 14

Correct

Mark 1.00 out of 1.00

Select the Three-Address Code associated with the run-time allocation and de-allocation of activation records.

- a. Call and Action
- b. Halt and Action
- c. Call, Return, Action and Halt ✔
- d. Call and Return

Your answer is correct.

The correct answer is:
Call, Return, Action and Halt

Question 15

Correct

Mark 1.00 out of 1.00

_____ is a data structure that consists of a use, U, of a variable, and all the definitions, D, of that variable that can reach that use without any other intervening definitions.

- a. Definition Chain
- b. Definition- Use Chain
- c. Use Chain
- d. Use-Definition Chain ✔

Your answer is correct.

The correct answer is:
Use-Definition Chain

Question 16

Correct

Mark 1.00 out of 1.00

_____ is a simple, systematic technique for allocating registers and managing register spills.

- a. Filling
- b. Interference graph
- c. Graph coloring ✔
- d. Spilling

Your answer is correct.

The correct answer is:
Graph coloring

Question 17

Incorrect

Mark 0.00 out of 1.00

Select the efficient code that can be generated for the following three-address code sequence: (Assume R0 and R1 is allocated for B and C respectively)

A=B+C

C=C+1

a. MOV R1,R0
INC C

b. ADD R1,R0
ADD #1,R1

c. ADD R1,R0
INC C

d. MOV B,R0
ADD R1,R0
INC C ✖

Your answer is incorrect.

The correct answer is:

ADD R1,R0

INC C

Question 18

Correct

Mark 1.00 out of 1.00

Expensive operations replaced with equivalent but less expensive operations is called _____

- a. Reduction in Strength ✔
- b. Copy Propagation
- c. Dead Code
- d. Constant Folding

Your answer is correct.

The correct answer is:
Reduction in Strength

Question 19

Correct

Mark 1.00 out of 1.00

Expansion for DAG

- a. Derived Acyclic Graph
- b. Directed Asymmetric Graph
- c. Directed Acyclic Graph ✔
- d. Derived Asymmetric Graph

Your answer is correct.

The correct answer is:
Directed Acyclic Graph

Question 20

Correct

Mark 1.00 out of 1.00

Producing an _____ machine language as output has the advantage that it can be placed in a fixed location in memory and immediately executed.

- a. Relocatable
- b. Reloadable
- c. Intermediate
- d. Absolute ✔

Your answer is correct.

The correct answer is:
Absolute

Question 21

Incorrect

Mark 0.00 out of 1.00

The Compiler collects complete information about the program using

- a. Code generation ✖
- b. Loop optimization
- c. Peephole optimization
- d. Global data flow analysis

Your answer is incorrect.

The correct answer is:
Global data flow analysis

Question 22

Correct

Mark 1.00 out of 1.00

The memory locations where the values of the identifiers are stored are tracked by the _____

- a. Address Descriptor ✔
- b. Register Descriptor
- c. Stack Pointer
- d. Temporary Descriptor

Your answer is correct.

The correct answer is:
Address Descriptor

Question 23

Incorrect

Mark 0.00 out of 1.00

Internal nodes in a DAG can contain:

- a. Attached list of constant
- b. Attached list of operators ✖
- c. Attached list of identifiers and constant
- d. Attached list of identifiers

Your answer is incorrect.

The correct answer is:
Attached list of identifiers

Question 24

Correct

Mark 1.00 out of 1.00

_____ for a procedure has fields to hold parameters, results, local data and machine status information

- a. Symbol Table
- b. Activation Record ✔
- c. Hash Table
- d. Linear List

Your answer is correct.

The correct answer is:
Activation Record

Question 25

Correct

Mark 1.00 out of 1.00

The Target machine is a _____ machine with four bytes to a word and n general purpose registers, R0 , R1 ,..Rn-1.

- a. Bit-addressable
- b. Mega bit-addressable
- c. Byte-addressable ✔
- d. All the given options

Your answer is correct.

The correct answer is:
Byte-addressable

Question 26

Correct

Mark 1.00 out of 1.00

_____ is used to determine the status of available registers and the location of name values.

- a. getReg ✔
- b. getRegis
- c. setRegis
- d. setReg

Your answer is correct.

The correct answer is:
getReg

Question 27

Incorrect

Mark 0.00 out of 1.00

The transformation that capture expression producing the same result independent of the number of times a loop is executed is called:

- a. Loop-invariant computation
- b. Reduction in strength ✖
- c. Induction variable elimination
- d. Copy propagation

Your answer is incorrect.

The correct answer is:
Loop-invariant computation

Question 28

Correct

Mark 1.00 out of 1.00

Issues that arise during the code generation phase: (Multiple Select)

- [x] a. Register Allocation
- [x] b. Instruction Selection
- [x] c. Evaluation Order
- [ ] d. Code optimization

Your answer is correct.

The correct answers are:

Evaluation Order

Question 29

Correct

Mark 1.00 out of 1.00

Formula for allocating a register to x within loop L is

- a. $\sum(use(x,B)+live(x,B))$
- b. $\sum use(x,B)$
- c. $\sum 2 * live(x,B)$
- d. \(\sum (use(x,B)+2*live(x,B)) \) ✔

Your answer is correct.

The correct answer is:
\(\sum (use(x,B)+2*live(x,B)) \)

Question 30

Correct

Mark 1.00 out of 1.00

Sequence of consecutive statements in which flow-of-control enters at the beginning and leaves at the end without halt or possibility of branching except at the end is called _____

- a. Flow Graph
- b. DAG
- c. Dominator Tree
- d. Basic Blocks ✔

Your answer is correct.

The correct answer is:
Basic Blocks

◄ CONTINUOUS ASSESSMENT EXAMINATION-II

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Assignment-III (Nov 9,2020 Due:17-11-2020) ►