[2020]/[Quiz 3]/[CD]

Question 01 (MC)

Which of the following is not a property for code improvement?			*MC*
		Default mark:	1
		Shuffle the choices?	Yes
		Number the choices?	A
		Penalty for each incorrect try:	0
#	**Answers**	**Feedback**	**Grade**
A.	Optimize the output		*100*
B.	Reduce CPU time		*0*
C.	Preserve meaning of program		*0*
D.	Consume less time for improvement		*0*
E.			*0*

Question 02 (MC)

Keeping _____ variables in _____ can cut running time significantly by a half.			*MC*
		Default mark:	1
		Shuffle the choices?	Yes
		Number the choices?	A
		Penalty for each incorrect try:	0
#	**Answers**	**Feedback**	**Grade**
A.	Heavily used, registers		*100*
B.	Rarely used, registers		*0*
C.	Heavily used, memory		*0*
D.	Moderately used, registers		*0*
E.			*0*

Question 03 (MC)

Using Dead code elimination on the following statements yield: x := 32 y := x + y z:= 42 r := z * y			*MC*
		Default mark:	1
		Shuffle the choices?	Yes
		Number the choices?	A
		Penalty for each incorrect try:	0
#	**Answers**	**Feedback**	**Grade**

Using Dead code elimination on the following statements yield: x := 32 y := x + y z:= 42 r := z * y	*MC*
Default mark:	1
Shuffle the choices?	Yes
Number the choices?	A
Penalty for each incorrect try:	0

#	Answers	Feedback	Grade
A.	y:=y + 32 r:= 42 * y		*100*
B.	x:=32 y:=x+32 r:=z * 42		*0*
C.	y:=x y:=x+y r:=32 * 42		*0*
D.	y:=x + y r:=z * y		*0*
E.			*0*

Question 04 (MC)

Which of the following is an example for Algebraic simplification in code optimization?	*MC*
Default mark:	1
Shuffle the choices?	Yes
Number the choices?	A
Penalty for each incorrect try:	0

#	Answers	Feedback	Grade
A.	x:=x*2 -> x:=x+x		*0*
B.	x:=:x*2 -> pow(x,2)		*0*
C.	x:=x+0 -> remove the code		*100*
D.	x:=x*4 -> x:=x+x+x+x		*0*
E.			*0*

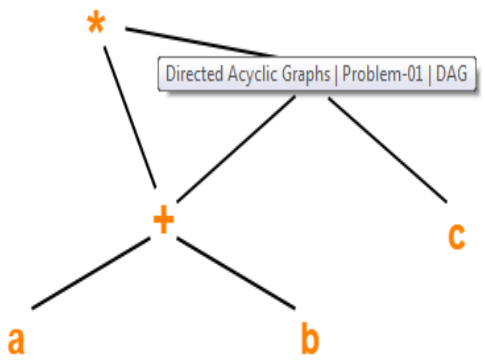
Question 05 (MC)

A flow graph is reducible if and only if _____	*MC*
Default mark:	1
Shuffle the choices?	No
Number the choices?	A
Penalty for each incorrect try:	0

#	Answers	Feedback	Grade

A flow graph is reducible if and only if _____			*MC*
		Default mark:	1
		Shuffle the choices?	No
		Number the choices?	A
		Penalty for each incorrect try:	0
#	**Answers**	**Feedback**	**Grade**
A.	Forward edges form an acyclic graph in which every node can be reached from the initial node		*0*
B.	Back edges consist only of edges whose heads dominate their tails		*0*
C.	Both A & B		*100*
D.	None of the above		*0*
E.			*0*

Question 06 (MC)



Given DAG is for the expression _____

MC

		Default mark:	1
		Shuffle the choices?	Yes
		Number the choices?	A
		Penalty for each incorrect try:	0
#	**Answers**	**Feedback**	**Grade**
A.	(a+b)*(a+b+c)		*100*
B.	(a+b)+c*(a+b+c)		*0*
C.	(a+b)*(b+c)		*0*
D.	(a+b)*(a+c)		*0*
E.			*0*

Question 07 (MC)

Which of the following is not a feature of Peephole Optimization?			*MC*
		Default mark:	1
		Shuffle the choices?	Yes
		Number the choices?	A
		Penalty for each incorrect try:	0
#	**Answers**	**Feedback**	**Grade**
A.	Variable analysis		*100*
B.	Local in nature		*0*
C.	Limited by the size of the window		*0*
D.	Pattern driven		*0*
E.			*0*

Question 08 (MC)

Code motion when applied on the following code results in while (i<= limit-2)			*MC*
		Default mark:	1
		Shuffle the choices?	Yes
		Number the choices?	A
		Penalty for each incorrect try:	0
#	**Answers**	**Feedback**	**Grade**
A.	t = limit – 2; while(i<=t)		*100*
B.	while(i<=limit) limit = limit-2;		*0*
C.	i =limit; while(i<=limit)		*0*
D.	while(i<=limit-2) i=i—2;		*0*
E.			*0*

Question 09 (MC)

Above graph is an example for _____			*MC*
		Default mark:	1
		Shuffle the choices?	Yes
		Number the choices?	A
		Penalty for each incorrect try:	0
#	**Answers**	**Feedback**	**Grade**

Above graph is an example for _____			*MC*
		Default mark:	1
		Shuffle the choices?	Yes
		Number the choices?	A
		Penalty for each incorrect try:	0
#	**Answers**	**Feedback**	**Grade**
A.	Non-reducilbe graph		*100*
B.	Reducible graph		*0*
C.	Cyclic graph		*0*
D.	Acyclic graph		*0*
E.			*0*

Question 10 (MC)

Which of the following cannot be called as ambiguous definition of a variable?			*MC*
		Default mark:	1
		Shuffle the choices?	No
		Number the choices?	A
		Penalty for each incorrect try:	0
#	**Answers**	**Feedback**	**Grade**
A.	Read a value from I/O device and store in “x”		*100*
B.	An assignment through a pointer that could refer to “x”		*0*
C.	Call of prodedure with “x” as a parameter		*0*
D.	None of the above		*0*
E.			*0*

Question 11 (MC)

Which of the following is the benefit of using a machine-independent intermediate form?			*MC*
		Default mark:	1
		Shuffle the choices?	Yes
		Number the choices?	A
		Penalty for each incorrect try:	0
#	**Answers**	**Feedback**	**Grade**
A.	Regretting is facilitated		*0*
B.	Machine independent code optimizer can be applied.		*0*
C.	Both A & B		*100*
D.	None of the above		*0*
E.			*0*

Question 12 (MC)

Record structure of a quadruple does not contain _____			*MC*
		Default mark:	1
		Shuffle the choices?	Yes
		Number the choices?	A
		Penalty for each incorrect try:	0
#	**Answers**	**Feedback**	**Grade**
A.	Keyword		*100*
B.	Arguments		*0*
C.	Result		*0*
D.	Operator		*0*
E.			*0*

Question 13 (MC)

Op	arg_1	arg_2	result
*	c	d	r1
+	b	r1	r2
+	r2	r1	r3
=	r3		a

Above intermediate code representation is for the expression _____

MC

		Default mark:	1
		Shuffle the choices?	Yes
		Number the choices?	A
		Penalty for each incorrect try:	0
#	**Answers**	**Feedback**	**Grade**
A.	a=b+c*d		*100*
B.	a=b+r2*r3		*0*
C.	a=b*c+d		*0*
D.	r3=r1+r2*c		*0*
E.			*0*

Question 14 (MC)

_____ 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.			*MC*
		Default mark:	1
		Shuffle the choices?	Yes
		Number the choices?	A
		Penalty for each incorrect try:	0
#	**Answers**	**Feedback**	**Grade**
A.	DAG		*100*
B.	CAG		*0*
C.	SAG		*0*
D.	PAG		*0*
E.			*0*

Question 15 (MC)

Which of the following is not a form of Intermediate representation?			*MC*
		Default mark:	1
		Shuffle the choices?	Yes
		Number the choices?	A
		Penalty for each incorrect try:	0
#	**Answers**	**Feedback**	**Grade**
A.	Directed cyclic Graph		*100*
B.	3-address code		*0*
C.	Abstract Syntax Tree		*0*
D.	Reverse Polish Notation		*0*
E.			*0*

Question 16 (MC)

The least number of temporary variables required to create a three-address code in static single assignment form for the expression *q+r/3+s−t∗5+u∗v/wq+r/3+s−t∗5+u∗v/w is* _____			*MC*
		Default mark:	1
		Shuffle the choices?	Yes
		Number the choices?	A
		Penalty for each incorrect try:	0
#	**Answers**	**Feedback**	**Grade**

The least number of temporary variables required to create a three-address code in static single assignment form for the expression *q+r/3+s−t∗5+u∗v/wq+r/3+s−t∗5+u∗v/w is* _____			*MC*
		Default mark:	1
		Shuffle the choices?	Yes
		Number the choices?	A
		Penalty for each incorrect try:	0
#	**Answers**	**Feedback**	**Grade**
A.	8		*100*
B.	10		*0*
C.	7		*0*
D.	9		*0*
E.			*0*

Question 17 (MC)

Consider the intermediate code given below. (1) i = 1 (2) j = 1 (3) t1 = 5 * i (4) t2 = t1+ j (5) t3 = 4 * t2 (6) t4 = t3 (7) a[t4] = – 1 (8) j = j + 1 (9) if j < = 5 goto (3) (10) i = i + 1 (11) if i< 5 goto (2) The number of nodes and edges in the control-flow-graph constructed for the above code, respectively, are			*MC*
		Default mark:	1
		Shuffle the choices?	Yes
		Number the choices?	A
		Penalty for each incorrect try:	0
#	**Answers**	**Feedback**	**Grade**
A.	6 and 7		*100*
B.	5 and 7		*0*
C.	5 and 5		*0*
D.	6 and 6		*0*
E.			*0*

Question 18 (MC)

Which one of the following is **FALSE?**			*MC*
		Default mark:	1
		Shuffle the choices?	Yes
		Number the choices?	A
		Penalty for each incorrect try:	0
#	**Answers**	**Feedback**	**Grade**
A.	$x = 4 * 5 \Rightarrow x = 20$ is an example of common subexpression elimination		*100*
B.	Live variable analysis can be used for dead code elimination		*0*
C.	Available expression analysis can be used for common subexpression elimination.		*0*
D.	A basic block is a sequence of instructions where control enters the sequence at the beginning and exits at the end.		*0*
E.			*0*

Question 19 (MC)

Some code optimizations are carried out on the intermediate code because			*MC*
		Default mark:	1
		Shuffle the choices?	Yes
		Number the choices?	A
		Penalty for each incorrect try:	0
#	**Answers**	**Feedback**	**Grade**

Some code optimizations are carried out on the intermediate code because			*MC*
		Default mark:	1
		Shuffle the choices?	Yes
		Number the choices?	A
		Penalty for each incorrect try:	0
#	**Answers**	**Feedback**	**Grade**
A.	They enhance the portability of the compiler to other target processors		*100*
B.	Program analysis is more accurate on intermediate code than on machine code		*0*
C.	The information from dataflow analysis cannot otherwise be used for optimization		*0*
D.	The information from the front end cannot otherwise be used for optimization		*0*
E.			*0*

Question 20 (MC)

E1.true := E.true; E1.false := newlabel; E2.true := E.true; E2.false := E.false; E.code := E1.code || gen(E1.false':') || E2.code Above given semantic rules are for which of these productions			*MC*
		Default mark:	1
		Shuffle the choices?	Yes
		Number the choices?	A
		Penalty for each incorrect try:	0
#	**Answers**	**Feedback**	**Grade**
A.	E -> E1 or E2		*100*
B.	E -> E1 and E2		*0*
C.	E -> not E1		*0*
D.	E -> (E1)		*0*
E.			*0*