Question 15 of 15
6.0 Points
Specify which of the following techniques are applied to optimize the intermediate code:
A. Calculations at compile-time, Redundant calculations and Elimination of unattainable code;
B. Calculations at compile-time, Elimination of unattainable code and Cycle optimizations;
C. Calculations at compile-time, Redundant calculations and Cycle optimizations;
D. Redundant calculations, Elimination of unattainable code and Cycle optimizations;
E. Calculations at compile-time and Cycle optimizations;

Question 14 of 15
6.0 Points
The output of an interpreter is:
A. Object code
B. Direct execution of the input code
C. Bytecode
D. Code translated in another high-level programming language
E. Executable binary code

Question 13 of 15
6.0 Points
Specify which of the following characteristics must be covered by a symbol table:
A. Acceptance of the duplicate entries, Reduced search time and Maintenance of the symbol table;
B. Flexibility regarding the symbol names and extension of the table, Acceptance of the duplicate entries, Reduced search time, Maintenance of the symbol table and Efficient deletion of the symbol names in the symbol table;
C. Acceptance of the duplicate entries and Efficient deletion of the symbol names in the symbol table;
D. Flexibility regarding the symbol names and extension of the table, Acceptance of the duplicate entries and Maintenance of the symbol table;
E. Flexibility regarding the symbol names and extension of the table, Reduced search time and Efficient deletion of the symbol names in the symbol table;

Question 12 of 15
6.0 Points

It considers the following quadruples for the expression a*b+3*c*(d-e):

op	arg1	arg2	rez
*	a	b	T1
*	3	c	T2
-	d	e	T3
*	T2	T3	T4

Specify which of the following quadruples must complete the last row in above table such as the expression to have a correct evaluation:
A. + T1 T5 T4
B. + T1 T4 T5
C. + b T4 T5
D. + T4 T1 T5
E. + T3 T4 T5

Question 11 of 15
6.0 Points
The Bytecode is:
A. The total memory of a process;
B. An array containing temporary values of the operands;
C. A programming language;
D. A LIFO structure;
E. Byte array containing codes of the operations and operands;

Question 10 of 15
6.0 Points
Which of the following statements regarding the concept of SOFTWARE ENGINEERING is true?
A. Modifying a software system by adding new functionalities and correction of errors;
B. Concept equivalent to REVERSE ENGINEERING;
C. Later modification of the software system;
D. Re-building a software system in a new form;

E. Systematic, disciplined approach, quantifiable for software development, usage and maintenance;

Question 9 of 15
6.0 Points
The following analysis table is considered LL(1):

	if	then	else	id	const	=	<	!=	$
S	If C then IT, 1								
T			else, 3						ε, 2
C				ERE, 4	ERE, 4				
E				id, 5	const, 6				
R							<, 7	!=, 8	
I				id = E, 9					
if	pop								
then		pop							
else			pop						
id				pop					
const					pop				
=						pop			
<							pop		
!=								pop	
$									acc

What is the non-terminal which contains one single item ε?

A. E
B. R
C. C
D. T
E. S

Question 8 of 15
6.0 Points
Specify the reverse Polish notation (postfixed expression) for a*b+3*c*(d-e):
A. ab*+3cde-**
B. ab*3c*de-*+
C. ab*3cde-**+
D. ab3cde-***+
E. ab*+3c*de-*

Question 7 of 15
6.0 Points
Which of the following elements is stages of the analysis and synthesis processes carried out by a compiler?
A. Management of symbol tables and Treating errors;
B. Lexical analysis, Semantic analysis, Management of symbol tables and Treating errors;
C. Lexical analysis, Semantic analysis and Generating intermediary code;
D. Generating intermediary code, Management of symbol tables and Treating errors;
E. Lexical analysis, Semantic analysis, Generating intermediary code, Management of symbol tables and Treating errors;

Question 6 of 15
6.0 Points
The internal form of the program as result of lexical analysis is given by:
A. Descriptive language of the programming language;
B. Set of finite automata;
C. A pair sequence (token code, position/address in symbol table);
D. Lexical tokens classes: identifiers, constants, key words, operators, separators;
E. The lexical tokens list identified in the source program;

Question 5 of 15
6.0 Points
The semantic analysis has as result:
A. Syntactic analysis tree;
B. Abstract syntax tree;
C. Object code;
D. Intermediate form as attributed tree;
E. Attribute grammars;

Question 4 of 15
6.0 Points
The folowing expression in reverse Polish notation

3 a = 4 b = 2 c = 3 d = a b + c d + *

is evaluated as:

A. 35
B. 12
C. 42
D. 17
E. 13

Question 3 of 15
6.0 Points
Specify which of the following statements regarding a *.com file is false:
A. It has the PSP structure attached at run-time;
B. The size is not greater than 64KB;
C. Execution is made from the 1st byte;
D. It is an image of the application in the memory;
E. It has an organizing format for the binary code;

Question 2 of 15
6.0 Points
Specify which if the following elements is the result of the syntactic analysis stage:
A. The syntactic analyzer;
B. The syntactic analysis tree;
C. The lexical tokens sequence;
D. The symbol table;
E. The internal form of the program;

Question 1 of 15
6.0 Points
It considers the following sequence of triplets for the expression a*b-3*c*(d+e):

Nr.	op	arg1	arg2
(1)	*	a	b
(3)	+	d	e
(4)	*	(2)	(3)
(5)	-	(1)	(4)

Specify which of the following triplets must complete the 2nd row from the above table such as the expression to have a correct evaluation:

A. (2) * 3 (1)
B. (2) * c (1)
C. (2) * c 3
D. (2) * (1) c
E. (2) * 3 c