RAGHU ENGINEERING COLLEGE (Autonomous)

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CLASS: II CSE II SEM SUBJECT: AUTOMATA & COMPILER DESIGN

UNIT-IV:

S.No	Question	A	B	C	D	Ans
1.	Which of these features of assembler are Machine-Dependent	Instruction formats	Addressing modes	Program relocation	All of the mentioned	D
2.	A compiler can check?	Logical Error	Syntax Error	Both Logical and Syntax Error	Not checks both Logical and Syntax Error	B
3.	By whom is the symbol table created?	Compiler	Interpreter	Assembler	None of the mentioned	A
4.	What does a Syntactic Analyzer do?	Maintain Symbol Table	Collect type of information	Create parse tree	None of the mentioned	C
5.	Type checking is normally done during?	Lexical Analysis	Syntax Analysis	Syntax Directed Translation	Code generation	C
6.	Type checking done by the compiler is	Static	Dynamic	Both static and dynamic	None of the other options	A
7.	Array bound check can be done	Statically	Dynamically	Both statically and dynamically	None of the other options	B
8.	For strongly-typed languages	Only static type checking is done	Only dynamic checking is done	Both static and dynamic checking are done	No type checking is done	A
9.	Type equivalence checks whether	Two type expressions are same or not?	Two expressions are same or not?	Two statements are same or not?	All of the other options	A
10.	Type of a statement is	Void	Type error	Void or type error	None of the other options	C
11.	The symbol table keeps account of the attributes of the ----------.	Identifiers	Values	Numbers	Text	A
12.	Data structure used to record the information is called a --------- table.	syntactic	symbol	value	tokens	B
13.	In an implementation of a compiler, portions of one or more phases are combined into module called a --------.	pass	parser	scanner	set	A
14.	. ---------- is a tool that automatically generating lexical analyzer.	LEX	HEX	SLR	CLR	A
15.	In CFG, the basic symbols of the language are called ----------.	terminals	non-terminals	symbols	digits	A
16.	Tokens are ----------.	terminals	non-terminals	symbols	digits	A
17.	---------- is a tree in which each leaf represents an operand and each interior node an operator.	Parse Tree	Semantic Tree	Syntax Tree	Structured Tree	C
18.	The properties of an entity are called as ----------	values	attributes	numbers	digits	B

19.	_____ is used in the several phases/stages of the compiler.	Table	Symbol Table	Records	Program.	B
20.	Information about the name is entered into the symbol table during _____ and _____.	lexical and syntactic analysis	lexical and code generation	lexical and error handler	lexical and code optimization	A
21.	Which of these is also known as look-a-head LR parser?	SLR	CLR	LALR	None of the mentioned	C
22.	What is the similarity between CLR, LALR and SLR?	Use same algorithm, but different parsing table	Same parsing table, but different algorithm	Their Parsing tables and algorithm are similar but uses top down approach	Both Parsing tables and algorithm are different	A
23.	If a state does not know whether it will make a shift operation or reduction for a terminal is called	Shift/reduce conflict	Reduce /shift conflict	Shift conflict	Reduce conflict	A
24.	The language accepted by a Push down Automata	Type0	Type1	Type2	Type3	C
25.	Which of the following parsers is the most powerful?	Operator-precedence	canonical LR	LALR	SLR	B
26.	A bottom-up parser generates	right-most derivation	right-most derivation in reverse	left-most derivation	left-most derivation in reverse	B
27.	Which is a top down parser?	Operator precedence	LALR	CLR	Recursive Descent parser	D
28.	Type 0 Grammar Accepted by	FA	Turing Machine	PDA	LBA	B
29.	The Grammar of Finite Automata	Regular	Context Free	Context Sensitive	Unrestricted	A
30.	Implicit Type conversion is also called	coercion	Type Manipulation	Type changing	None of these	A
31.	Which of the following relates to Chomsky hierarchy?	Regular< CFL<CSL <Unrestric ted	CFL<CSL< Unrestricte d<Regular	CSL<Unrest ricted<CF<R egular	None of the mentioned	A
32.	A language is accepted by a push down automata if it is:	regular	context free	both (a) and (b)	none of the mentioned	C
33.	The following denotion belongs to which type of language: G=(V, T, P, S)	Regular grammar	Context free grammar	Context Sensitive grammar	All of the mentioned	B
34.	There exists a CFG grammar such that: X->aX Which among the following is correct with respect to the given assertion?	Left Recursive Grammar	Right Recursive Grammar	Non Recursive Grammar	none of the mentioned	B
35.	Let T={p, q, r, s, t}. The number of strings in S* of length 4 such that no symbols can be repeated.	120	625	360	36	B
36.	Context free grammar is called Type 2 grammar because of _____ hierarchy.	Greibach	Backus	Chomsky	none of the mentioned	C

37.	Operator overloading is also called …….. polymorphism.	run time	initial time	compile time	completion time	C
38.	The general form of an overloaded casting operator function usually referred to as a ……..	casting function	operator function	conversion function	overloaded function	C
39.	The conversion from a class to any other type or any other class should make use of a …….. in the source class.	casting operator	constructo r	not applicable	operator function	A
40.	In compile-time polymorphism, a compiler is able to select the appropriate function for a particular call at the compile time itself, which is known as ……	early binding	static binding	static linking	All of the above	D

UNIT-V:

1.	When a computer is first turned on or restarted, a special type of absolute loader is executed called	Compile and GO loader	Boot loader	Boot strap loader	Relating loader	C
2.	A relocatable program form is one which	cannot be made to execute in any area of storage other than the one designated for it at the time of its coding or translation	consists of a program and relevant information for its relocation	can be processed to relocate it to a desired area of memory	all of these	C
3.	A language L allows declaration of arrays whose sizes are not known during compilation. It is required to make efficient use of memory. Which one of the following is true?	a compiler using static memory allocation can be written for L	a compiler cannot be written for L ; an interpreter must be used	a compiler using dynamic memory allocation can be written for L	none of these	C
4.	Reduction in strength means	replacing run-time computation by compile time computation	replacing a costly operation by a relatively cheaper one	Both (a) & (b)	removing loop invariant computation	C
5.	Running time of a program depends on	the way the registers and addressing modes are used	the order in which computations are performed	the usage of machine idioms	all of these	D
6.	Which of the following system software resides in the main memory always	Text Editor	Assembler	Linker	Loader	D
7.	A series of statements explaining how the data is to be processed is called	Assembly	Machine	COBOL	Program	D

8.	A system program that setup an executable program in main memory ready for execution is	Assembler	Linker	Loader	Load and go	C
9.	Assembler is a program that	Puts programs into memory and executes them	Translates the assembly language into machine language	Writes in high level language and produces an object program	None of the mentioned	B
10	The specific task storage manager performs	Allocation/ deal location of programs	Protection of storage area assigned to the program	Both of the mentioned	None of the mentioned	C
11	An intermediate code form is	Postfix notation	Syntax trees	Three address code	All of these	D
12	Synthesized attribute can be easily simulated by a	LL grammar	Ambiguous grammar	LR grammar	None of the above	C
13	Shift reduce parsers are	Top down parser	Bottom up parser	May be top down or bottom up parser	None of the above	B
14	Who stores the address of activation record of the caller procedure	Local Data	Access Link	Temporaries	Control link	D
15	Data objects allocated at run-time stored at ------- in the storage organization	Code	Heap	Stack	None of These	C
16	For an activation tree which statement is not true	Each node represents an activation of a procedure	The root represents the activation of the main program	The node ‘b’ is a parent of the node ‘a’, iff the control flows from a to b	None of these	D
17	Lexical scoping means	Static scoping	Dynamic scoping	Both	None	A
18	Which is refers to the value of an expression	l-value	r-value	Both	None	B
19	l-value refers to	Address of expression	Value of expression	Both	None	A
20	In which mechanism, the name of the procedure being called is replaced by its actual body.	Pass by Name	Pass by Value	Pass by Address	None	A
21	The tree is used to show the way control enters and leaves activations is----------	Syntax tree	Semantic Tree	Activation Tree	None	C
22	Which register keeps tracks of the instructions stored in program stored in memory?	AR (Address Register)	XR (Index Register)	PC (Program Counter)	AC (Accumulator)	C
23	Advantage of panic mode of error recovery is that	it is simple to implement	it never gets into an infinite loop	both (a) and (b)	None of these	C
24	Formal parameters if manipulated have no real-time effect on actual parameters (as l-values are passed), but when the called procedure ends, the l-values of formal parameters are copied to the l-values of actual parameters.	Pass by value	Pass by Copy-restore	Pass by Reference	None of these	B
25	Implicit de-allocation method includes	Reference counts	Marking Techniques	Both of these	None of these	C
26	If there is no cyclical reference occurs then which method is best for Implicit de-allocation	Reference counts	Marking Techniques	Both of these	None of these	A
27	In which Implicit de-allocation method it marks all the blocks unused. Then follow the pointers & mark all the reachable blocks as used.	Reference counts	Marking Techniques	Both of these	None of these	B
28	If reference count becomes ---------- , then the object is garbage and its space becomes available	0	1	2	3	A

29	C programming language follows -------- scoping	Static	Dynamic	Both	None	A
30	Variables that take the information passed by the caller procedure are called-------	Formal Parameter	Actual Parameter	None of these	Can't say	A
31.	In activation record, Which of the following Stores the address of activation record of the caller procedure?	Access Link	Actual Parameters	Control Link	Temporaries	C
32.	Whenever a procedure is executed, its activation record is stored on the stack, also known as?	Access Stack	Control stack	Formal Stack	Return Stack	B
33.	_____ are known at the runtime only, unless they are global or constant.	Values	Object	Variables	All of the above	C
34.	The location of memory (address) where an expression is stored is known?	r-value	k-value	l-value	t-value	C
35.	What is true about Formal Parameters?	These variables are declared in the definition of the called function	These variables are specified in the function call as arguments.	Variables whose values or addresses are being passed to the called procedure are called Formal Parameter.	All of the above	A
36.	In which mechanism, the calling procedure passes the r-value of actual parameters and the compiler puts that into the called procedure's activation record?	Pass by Reference	Pass by Name	Pass by Copy-restore	Pass by Value	D
37.	In which mechanism, the name of the procedure being called is replaced by its actual body?	Pass by Reference	Pass by Name	Pass by Copy-restore	Pass by Object	B
38.	What will be error? `7 = x + y;`	l-value error	r-value error	Infinite loop	Both A and B	A
39.	Which of the following known as the text part of a program that does not change at runtime. Its memory requirements are known at the compile time?	Code	Procedures	Variables	All of the above	A
40.	A procedure has a start and an end delimiter and everything inside it is called the body of the procedure.	TRUE	FALSE	A procedure has a start with delimiter but not end with delimiter.	A procedure has a not start with delimiter but end with delimiter.	A

UNIT-VI:

1.	Compiler can diagnose	Grammatical errors only	Logical errors only	Grammatical and logical errors	None of the mentioned	A
2.	A system program that set-up an executable program in main memory ready for execution is	Assembler	Linker	Loader	Text editor	C
3.	A programmer by mistake writes multiplication instead of division, such error can be detected by a/an	Compiler	Interpreter	Compiler or interpreter test	None of the mentioned	D
4.	LR parser are attractive because	It can be constructed to recognize CFG corresponding to almost all programming constructs	It does not backtrack	Both of the mentioned	None of the mentioned	C
5.	Object program is a	Program written in machine language	Translated into machine language	Translation of high-level language into machine language	None of the mentioned	C
6.	The process manager has to keep track of	Status of each program	Information to a programmer using the system	Both of the mentioned	None of the mentioned	C
7.	Which of the following is true for machine language?	Continuous execution of program segments	Depicting flow of data in a system	A sequence of instructions which solves a problem	The language which interacts with the computer using only the binary digits 1 and 0.	D
8.	The graph that shows basic blocks and their successor relationship is called	Dag	Flow Graph	Control Graph	Hamilton Graph	B
9.	The identification of common sub-expression and replacement of run-time computations by compile-time computations is	Local optimization	Loop optimization	Constant folding	Data flow analysis	C
10.	Some code optimizations are carried out on the intermediate code because	they enhance the portability of the compiler to other target processors	program analysis is more accurate on intermediate code than on machine code	the information from dataflow analysis cannot otherwise be used for optimization	the information from the front end cannot otherwise be used for optimization	A
11.	Which one of the following is FALSE?	A basic block is a sequence of instructions where control enters the sequence at the	Available expression analysis can be used for common subexpression elimination.	Live variable analysis can be used for dead code elimination.	x = 4 □ 5 => x = 20 is an example of common subexpression elimination.	D

		beginning and exits at the end.				
12.	One of the purposes of using intermediate code in compilers is to	make parsing and semantic analysis simpler.	improve error recovery and error reporting.	increase the chances of reusing the machine-independent code optimizer in other compilers.	improve the register allocation	C
13.	In a resident- OS computer, which of the following system software must reside in the main memory under all situations?	Assembler	Linker	Loader	Compiler	C
14.	Which of the following comment about peep-hole optimization is true?	It is applied to small part of the code and applied repeatedly	It can be used to optimize intermediate code	It can be applied to a portion of the code that is not contiguous	It is applied in symbol table to optimize the memory requirements.	A
15.	Which of the following class of statement usually produces no executable code when compiled?	declaration	assignment statements	input and output statements	structural statements	A
16.	Relative to the program translated by a compiler, the same program when interpreted runs	Faster	Slower	At the same speed	May be faster or slower	B
17.	Substitution of values for names (whose values are constants) is done in	Local optimization	Loop optimization	Constant folding	Strength reduction	C
18.	In compiler terminology reduction in strength means	Replacing run time computation by compile time computation	Removing loop invariant computation	Removing common subexpressions	replacing a costly operation by a relatively cheaper one	D
19.	Peephole optimization is form of	Loop optimization	Local optimization	Constant folding	Data flow analysis	B
20.	A compiler for a high-level language that runs on one machine and produces code for a different machine is called	optimizing compiler	One pass compiler	cross compiler	multipass com piler	C
21.	An optimizing compiler	Is optimized to occupy less space	is optimized to take less time for execution	optimizes the code	All of the above	D
22.	In memory organization Code and static data sizes determined by which time	Compile time	Run Time	Both	Can't be told	A
23.	Variables that are defined by calls to the system storage allocator (malloc, new)	Stack	Heap	Static	Code	B
24.	Which is not TRUE for Register	Fast access	Supports pointer	Few of them	Address Space Not Visible	B
25.	Only the Machine dependent code optimization carried out in	Code Optimization phase	Code Generation Phase	Semantic Analysis Phase	Intermediate Code	B

					Generation Phase	
26.	In procedure gencode(n), RSTACK label meaning is?	stack of r-values	stack of registers	stack of l-values	stack of temporaries	B
27.	In labeling algorithm, If 'n' is the leftmost leaf child of its parent then label(n) is	1	0	Either 1 or 0	Information is sufficient	A
28.	In labeling algorithm, If 'n' is the interior node, its left child(L1) and right child(L2) labels values are same then label(n) is	L1 value	L2 value	L1-1	L1+1	D
29.	In labeling algorithm, If 'n' is the interior node, its left child(L1) and right child(L2) labels values are not same then label(n) is	L1 value	L2 value	Max(L1, L2)	Min(L1, L2)	C
30.	In procedure gencode(n), swap() function ensures---------	Swapping of top two temporaries in TSTACK	Swapping of bottom two temporaries in TSTACK	Swapping of top two registers in RSTACK	Swapping of bottom two registers in RSTACK	C

31.	Optimization can be categorized broadly into ___ types.	2	3	4	5	A
32.	A fragment of code that resides in the loop and computes the same value at each iteration is called a?	Induction analysis	Strength reduction	loop-invariant code	None of the above	C
33.	A variable is called an _____ variable if its value is altered within the loop by a loop-invariant value.	Invariant	induction	strength	loop	B
34.	Substitution of values for names whose values are constant, is done in	local optimization	loop optimization	constant folding	None of the above	C
35.	Peep-hole optimization is a form of	loop optimization	local optimization	data flow analysis	constant folding	D
36.	Code generation can be considered as the?	first phase of compilation	second phase of compilation	third phase of compilation	final phase of compilation	D
37.	_____ 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.	DAG	CAG	SAG	PAG	A

38.	In Directed Acyclic Graph, Leaf nodes represent?	Identifiers	names	constants	All of the above	D
39.	In Algebraic expression simplification, a = a + 1 can simply be replaced by?	a	INC a	DEC a	MUL a	B
40.	x * 2 can be replaced by x << 1 is an example of?	Algebraic expression simplification	Accessing machine instructions	Strength reduction	Code Generator	C