

Name:

Enrolment No:

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

End Semester Examination, July 2020

Course: Compiler Design

Program: B.Tech-CS- OGI+BAO

Course Code: CSEG3015

Instructions: There are 60 multiple choice questions. All are compulsory.

Semester: VI

Time 02 hrs.

Max. Marks: 100

Points: **1**

1. Multiple Choice: "In a compiler, keywords of a language...

Question	"In a compiler, keywords of a language are recognized during"
Answer	<p>.....</p> <p>.....</p> <p><input checked="" type="checkbox"/> lexical analysis</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p>

Points: **3**

2. Multiple Choice: How many derivatio...

Question	How many derivation trees are there for string aaa given grammar G? $S \rightarrow aS \mid Sa \mid a$
Answer	<p>3</p> <p><input checked="" type="checkbox"/> 4</p> <p>5</p> <p>6</p>

3. Multiple Choice: An identifier is permitted to be ...

Points: 3

Question	An identifier is permitted to be a letter followed by any number of letter and digits. Which of the following expression defines an identifier:
Answer	<p>(L+D)*</p> <p>(L+D)+</p> <p>L(L+D)+</p> <p><input checked="" type="checkbox"/> L(L+D)*</p>

4. Multiple Choice: " The number of tokens in the followi...

Points: 3

Question	" The number of tokens in the following C statements are: <code>printf(i=%d, &i=%x , i, &i);</code> "
Answer	<p><input checked="" type="checkbox"/> 10</p> <p>3</p> <p>21</p> <p>26</p>

5. Multiple Choice: Consider a program P having two so...

Points: 3

Question	Consider a program P having two source modules M1 and M2. If M1 contains a reference to a function defined in M2 then the reference will be resolved at
Answer	compile time

run time

link time

load time

6. Multiple Choice: Which of the following data struc...

Points: 1

Question Which of the following data structure is used for managing information about variables and their attributes:

Answer parse table

code table

lexical table

symbol table

7. Multiple Choice: Which one of the following statemen...

Points: 3

Question Which one of the following statements is FALSE?

Answer Type checking is done before parsing.

High-level language programs can be translated to different intermediate representations.

Context free grammar can be used to specify both lexical and syntax rules.

Arguments to a function can be passed using the program stack.

8. Multiple Choice: Which of the following g...

Points: 3

Question Which of the following grammar is free from left recursion:

Answer " S--> AB, A-->Aa | b, B-->c"

" S --> Aa|B, A ---> Bd|Sc, B --->d"

" S ---> Aa|Bb, A ---> Bd, B --->Ae"

" S ---> AB|Bb|c, A ---> Bd, B --->e"

9. Multiple Choice: A compiler for a high-level lang...

Points: 1

Question	A compiler for a high-level language that runs on one machine and produces code for a different machine is called
Answer	<p>optimizing compiler</p> <p>one pass compiler</p> <p><input checked="" type="checkbox"/> cross compiler</p> <p>Multi-pass compiler</p>

10. Multiple Choice: The regular expression have all strings...

Points: 3

Question	The regular expression have all strings of 0s and 1s with no two consecutive 0s is :
Answer	<p>(0+1)</p> <p><input checked="" type="checkbox"/> $(0+1)(1+0)^*$</p> <p>(0+1)*</p> <p>(0+1)* 011</p>

11. Multiple Choice: Is GCC a cross Compiler

Points: 1

Question	Is GCC a cross Compiler
Answer	<p><input checked="" type="checkbox"/> yes</p> <p>no</p>

12. Multiple Choice: A compiler can check?

Points: 1

Question	<input checked="" type="checkbox"/> A compiler can check?
Answer	<p>syntax error</p> <p>syntax and logical error</p> <p>logical error</p>

none

Points: 3

13. Multiple Choice: "Given the language $L = \{ab, aa, baa\}$...

Question	"Given the language $L = \{ab, aa, baa\}$, which of the following strings are in L^* ? 1) abaabaaabaa 2) aaaabaaaa 3) baaaaabaaaab 4) baaaaabaa"
Answer	"1,2,3" "2,3,4" "1,3,4" <input checked="" type="checkbox"/> "1,2,4"

14. True / False: For every NFA a deterministic finite ...

Points: 1

Question	For every NFA a deterministic finite automaton (DFA) can be found that accepts the same language
Answer	<input checked="" type="checkbox"/> True <input type="checkbox"/> False

15. Multiple Choice: Which one of the following optio...

Points: 3

Question	Which one of the following options is true?
Answer	The grammar in which every production at right hand side has only 1 alternative is always LL(1). Non-deterministic grammars are not LL(1). Left recursive & ambiguous grammar is not LL(1) <input checked="" type="checkbox"/> all are true

16. Multiple Choice: When there is a reduce/reduce ...

Points: 3

Question	When there is a reduce/reduce conflict?
Answer	If a state does not know whether it will make a shift operation using the production rule i or j for a terminal If a state does not know whether it will make a shift or reduction operation using the production rule i or j for a terminal

If a state e does not know whether it will make a reduction operation using the production rule i or j for a terminal

none

17. Multiple Choice: Number o...

Points: **3**

Question

Number of elements in follow of A
in the following grammar? $T \rightarrow AB$
 $A \rightarrow a/b$ $B \rightarrow c/d$:

Answer

1

2

3

4

18. Multiple Choice: Which one of the following kinds of ...

Points: **1**

Question

Which one of the following kinds of derivation is used by LR parsers?

Answer

Rightmost in reverse

leftmost in reverse

rightmost

leftmost

19. Multiple Choice: " Among simple LR (SLR), canonic...

Points: **3**

Question

" Among simple LR (SLR), canonical LR, and look-ahead LR (LALR), which of the following pairs identify the method that is very easy to implement and the method that is the most powerful, in that order? "

Answer

" SLR, CLR"

"SLR, LALR"

"CLR, LALR"

"LALR,CLR"

Points: 1

20. Multiple Choice: A grammar that produces more than one...

Question	A grammar that produces more than one parse tree for some sentence is called
Answer	<input checked="" type="checkbox"/> ambiguous
	<input type="checkbox"/> unambiguous
	<input type="checkbox"/> regular
	<input type="checkbox"/> none

Points: 1

21. Multiple Choice: The optimization which avoids test at...

Question	The optimization which avoids test at every iteration is
Answer	<input checked="" type="checkbox"/> Loop unrolling
	<input type="checkbox"/> Loop Jamming
	<input type="checkbox"/> Constant folding
	<input type="checkbox"/> none

Points: 3

22. Multiple Choice: " What ...

Question	" What is the maximum number of reduce moves that can be taken by a bottom-up parser for a grammar with no epsilon- and unit-production (i.e., of type $A \rightarrow \epsilon$ and $A \rightarrow a$) to parse a string with n tokens?"
Answer	<input type="checkbox"/> $n/2$
	<input checked="" type="checkbox"/> $n-1$
	<input type="checkbox"/> n
	<input type="checkbox"/> none

Points:



23. Multiple Choice: In an absolute loading scheme which loader function is accomplished by assembler?

Question	In an absolute loading scheme which loader function is accomplished by assembler?
Answer	<input checked="" type="checkbox"/> reallocation <input type="checkbox"/> allocation <input type="checkbox"/> linking <input type="checkbox"/> loading

Points:



24. Multiple Choice: An LALR(1) parser for a grammar ...

Question	An LALR(1) parser for a grammar G can have shift-reduce (S-R) conflicts if and only if
Answer	<input checked="" type="checkbox"/> The LR(1) parser for G has S-R conflicts <input type="checkbox"/> The SLR parser for G has S-R conflicts <input type="checkbox"/> The LR(0) parser for G has S-R conflicts <input type="checkbox"/> The LALR(1) parser for G has R-R conflicts

Points:



25. Multiple Choice: Which of the following is a top do...

Question	Which of the following is a top down parser:
Answer	<input checked="" type="checkbox"/> Recursive descent parser <input type="checkbox"/> Operator precedence parser <input type="checkbox"/> shift reduce parser <input type="checkbox"/> LR(k) parser

Points:



26. Multiple Choice: Consider...

Question	
----------	--

Consider the grammar with non-terminals $N = \{S, C, S1\}$, terminals $T = \{a, b, i, t, e\}$, with S as the start symbol, and the following set of rules: $S \rightarrow iCtSS1 | aS1$, $S1 \rightarrow eS | \epsilon$, $C \rightarrow b$. The grammar is NOT LL(1) because:

Answer

context free

ambiguous

left recursive

right recursive

27. Multiple Choice: &n...

Points: **3**

Question

A canonical set of items is given below $S \rightarrow L > R$, $Q \rightarrow R$. On input symbol $<$ the set has

Answer

A S-R and R-R conflict

A S-R but not R-R conflict

A R-R but not S-R conflict

Neither S-R nor R-R conflict

28. Multiple Choice: " Consider the following ...

Points: **3**

Question

" Consider the following grammar: $S \rightarrow FR$, $R \rightarrow S | \epsilon$, $F \rightarrow id$. In the predictive parser table, M , of the grammar the entries $M[S, id]$ and $M[R, \$]$ respectively."

Answer

$\{S \rightarrow FR\}$ and $\{R \rightarrow \epsilon\}$

$\{S \rightarrow FR\}$ and $\{ \}$

{S \rightarrow FR} and {R \rightarrow *S}

{F \rightarrow id} and {R \rightarrow ϵ }

29. Multiple Choice: " Consider the grammar: S ? (S) | a ...

Points: 3

Question " Consider the grammar: S ? (S) | a Let the number of states in SLR(1), LR(1) and LALR(1) parsers for the grammar be n1, n2 and n3 respectively. The following relationship holds good"

Answer n1

n1=n3

n1=n2=n3

n1>n2>n3

30. Multiple Choice: The grammar S \rightarrow aSa | bS | c is

Points: 3

Question The grammar S \rightarrow aSa | bS | c is

Answer LL(1) but not LR(1)

LR(1)but not LR(1)

Both LL(1)and LR(1)

Neither LL(1)nor LR(1)

31. Multiple Choice: Which of the following statements i...

Points: 3

Question Which of the following statements is false?

Answer An LL(1) parser is a top-down parser

LALR is more powerful than SLR

An ambiguous grammar can never be LR(k) for any k

An unambiguous grammar has same leftmost and rightmost derivation

32. Multiple Choice: Peephole optimization is a form of

Points:

Question	Peephole optimization is a form of
Answer	<input type="checkbox"/> loop optimization
	<input checked="" type="checkbox"/> local optimization
	<input type="checkbox"/> constant folding
	<input type="checkbox"/> data flow analysis

33. Multiple Choice: Substitution of values for names (whose values are constants) is done in

Points:

Question	Substitution of values for names (whose values are constants) is done in
Answer	<input type="checkbox"/> loop optimization
	<input type="checkbox"/> local optimization
	<input type="checkbox"/> strength reduction
	<input checked="" type="checkbox"/> constant folding

34. Multiple Choice: In compiler terminology reduction in strength means

Points:

Question	In compiler terminology reduction in strength means
Answer	<input type="checkbox"/> Replacing run time computation by compile time computation
	<input type="checkbox"/> Removing loop invariant computation
	<input type="checkbox"/> Removing common subexpressions
	<input checked="" type="checkbox"/> Replacing a costly operation by a relatively cheaper one

35. Multiple Choice: Which of the following statements about peephole optimization is False?

Points:

Question	Which of the following statements about peephole optimization is False?
Answer	<input type="checkbox"/> It is applied to a small part of the code

It can be used to optimize intermediate code

" To get the best out of this, it has to be applied repeatedly"



It can be applied to the portion of the code that is not contiguous



36. Multiple Choice: The graph that shows basic blocks and...

Points: **1**

Question	The graph that shows basic blocks and their successor relationship is called
Answer	DAG
	Control graph
	<input checked="" type="checkbox"/> flow graph
	hamiltonian graph



37. Multiple Choice: Dead-code elimination in machine code...

Points: **1**

Question	Dead-code elimination in machine code optimization refers to:
Answer	Removal of all labels
	<input checked="" type="checkbox"/> Removal of values that never get used
	Removal of function which are not involved
	Removal of a module after its use



38. Multiple Choice: Some code optimizations are carried o...

Points: **1**

Question	Some code optimizations are carried out on the intermediate code because:
Answer	<input checked="" type="checkbox"/> 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

Points: 1

39. Multiple Choice: The action of parsing the source prog...

Question	The action of parsing the source program into proper syntactic classes is called
Answer	<input checked="" type="checkbox"/> lexical analysis
	<input type="checkbox"/> syntax analysis
	<input type="checkbox"/> interpretation analysis
	<input type="checkbox"/> none

Points: 1

40. Multiple Choice: Running time of a program depends on

Question	Running time of a program depends on
Answer	<input type="checkbox"/> Addressing mode
	<input type="checkbox"/> order of computation
	<input type="checkbox"/> the usage of machine idioms
	<input checked="" type="checkbox"/> all mentioned

Points: 1

41. Multiple Choice: Another name of lexical analyzer is

Question	Another name of lexical analyzer is
Answer	<input type="checkbox"/> Linear phase
	<input type="checkbox"/> linear analysis
	<input type="checkbox"/> scanning
	<input checked="" type="checkbox"/> all mentioned

Points: 1

42. Multiple Choice: An individual token is called

Question	An individual token is called
Answer	<input checked="" type="checkbox"/> Lexeme

lex

Lex and Lexeme

none



Points: 1

43. Multiple Choice: The language accepted by pushdown aut...

Question	The language accepted by pushdown automata is
Answer	<input type="radio"/> type 0 <input type="radio"/> type 1 <input checked="" type="radio"/> type 2 <input type="radio"/> type 3



Points: 1

44. Multiple Choice: Grammar that can be translated to DFA...

Question	Grammar that can be translated to DFAs is
Answer	<input checked="" type="radio"/> right linear grammar <input type="radio"/> left linear grammar <input type="radio"/> generic grammar <input type="radio"/> none



Points: 1

45. Multiple Choice: Cache memory works on the principle of

Question	Cache memory works on the principle of
Answer	<input type="radio"/> Locality of memory <input checked="" type="radio"/> Locality of reference

Locality of data

none

46. Multiple Choice: Regular expression are

Points: 1

Question	Regular expression are
Answer	<input checked="" type="checkbox"/> type 0 language
	<input type="checkbox"/> type 1 language
	<input type="checkbox"/> type 2 language
	<input type="checkbox"/> type3 language

47. Multiple Choice: The advantage of panic mode of error

Points: 1

...

Question	The advantage of panic mode of error recovery is that
Answer	<input checked="" type="checkbox"/> it is simple to implement
	<input type="checkbox"/> it is very fast
	<input type="checkbox"/> it never gets into infinite loop
	<input type="checkbox"/> none

48. Multiple Choice: An ideal compiler should

Points: 1

Question	An ideal compiler should
Answer	<input type="checkbox"/> detect error
	<input type="checkbox"/> detect and report error
	<input checked="" type="checkbox"/> "detect,report and correct error"
	<input type="checkbox"/> none

49. Multiple Choice: YAAC builds up

Points: 1

Question	YAAC builds up
Answer	SLR parsing table

Canonical LR parsing table

LALR parsing table

none



Points: 1

50. Multiple Choice: Which of the following is most powerf...

Question	Which of the following is most powerful compiler
Answer	SLR
	LALR
	<input checked="" type="checkbox"/> Canonical LR
	operator precedence



51. Multiple Choice: LR stands for

Points: 1

Question	LR stands for
Answer	left to right
	left to right reduction
	right to left
	<input checked="" type="checkbox"/> left to right and right to left derivation in reverse



52. Multiple Choice: Regular expressions are closed under

Points: 1

Question	Regular expressions are closed under
Answer	union
	intersection
	kleene closure
	<input checked="" type="checkbox"/> all mentioned

53. True / False: In Right-Linea...

Points: 1

Question	In Right-Linear grammars, all productions have the form: $A \rightarrow xB.$
Answer	<input checked="" type="checkbox"/> True <input type="checkbox"/> False

54. True / False: Linear grammar has more than one non...

Points: 1

Question	Linear grammar has more than one non-terminal on the right-hand side.
Answer	<input checked="" type="checkbox"/> True <input type="checkbox"/> False

55. Multiple Choice: CSG can be recognized by

Points: 1

Question	CSG can be recognized by
Answer	<input checked="" type="checkbox"/> 2 way linear bounded automata <input type="checkbox"/> PDA <input type="checkbox"/> FSA <input type="checkbox"/> none

56. Multiple Choice: CFG can be recognized by

Points: 1

Question	CFG can be recognized by
Answer	<input type="checkbox"/> PDA <input type="checkbox"/> 2 way linear bounded automata <input checked="" type="checkbox"/> both <input type="checkbox"/> none

57. Multiple Choice: Representing the syntax by a grammar

Points: 1

...

Question	Representing the syntax by a grammar is advantageous because
----------	--

Answer	it is concise
	it is accurate
	automation becomes easy
	<input checked="" type="checkbox"/> all mentioned


 Points: **1**

58. Multiple Choice: Which loader function is accomplished...

Question	Which loader function is accomplished by loader?
Answer	<input checked="" type="checkbox"/> loading
	linking
	reallocation
	allocation



59. Multiple Choice: Three address code involves

 Points: **1**

Question	Three address code involves
Answer	exactly three addresses
	<input checked="" type="checkbox"/> at the most three addresses
	no unary operator
	none



60. Multiple Choice: three address code can be implemented by

 Points: **1**

Question	three address code can be implemented by
Answer	indirect triples
	<input checked="" type="checkbox"/> quadruples
	link list
	none

