

# VIRTUAL UNIVERSITY OF PAKISTAN

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**TEAM HADI(VU LAHORE)**

## MID TERM PAST PAPER

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WARNING: Team HADI is not responsible for any mistake or wrong answer. All students reading and using this document may check and confirm the answers at their own.



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Best of luck!



Question No : 1 of 26

Marks: 1 (Budgeted Time 1 Min)

In compilers, linear analysis is also called \_\_\_\_\_.

Answer ( Please select your correct option )

☐ Lexical analysis

☐ Scanning

☒ Lexical analysis and scanning

☐ None of the given



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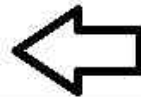
Question No : 2 of 26

Marks: 1 (Budgeted Time 1 Min)

Back End of two-pass compiler uses \_\_\_\_\_ algorithm.

Answer ( Please select your correct option )

- ☐  $O(n)$
- ☐  $O(n \log n)$
- ☐ NP Complete
- ☐ None of the Given



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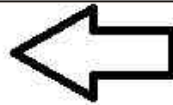
Question No : 3 of 26

Marks: 1 (Budgeted Time 1 Min)

The Back End of a compiler consist of \_\_\_\_\_

Answer ( Please select your correct option )

☐ Instruction selection



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☐ Register allocation

☐ Instruction scheduling

☐ All of the given

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Question No : 4 of 26

Marks: 1 (Budgeted Time 1 Min)

In Back End module of compiler, optimal register allocation uses \_\_\_\_\_.

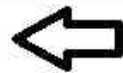
Answer ( Please select your correct option )

☐  $O(\log n)$

☐  $O(n \log n)$

☒ NP-Complete

☐ None of the given



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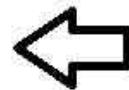
Question No : 5 of 26

Marks: 1 (Budgeted Time 1 Min)

A lexeme is a sequence of characters in the source program that is matched by the pattern for a \_\_\_\_\_.

Answer ( Please select your correct option )

- ☐ Linker
- ☐ Token
- ☐ Control flow
- ☐ None of given



Correct Ans  
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Question No : 6 of 26

Marks: 1 (Budgeted Time 1 Min)

\_\_\_\_\_ is a regular expression for the set of all strings over the alphabet  $\{a\}$  that has an even number of  $a$ 's.

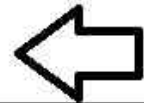
Answer ( Please select your correct option )

☐  $aa^*$

☐  $(aa)^*$

☐  $aa^*a$

☐  $a(aa)^*$



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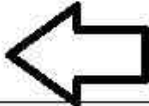


Question No : 7 of 26

Marks: 1 (Budgeted Time 1 Min)

What kind of abstract machine can recognize strings in a regular set?

Answer ( Please select your correct option )

- ☐ DFA
- ☐ NFA
- ☐ PDA
- ☐ None of the given
- 
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Question No : 8 of 26

Marks: 1 (Budgeted Time 1 Min)

\_\_\_\_\_ algorithm is used in DFA minimization.

Answer ( Please select your correct option )

☐ James's

☐ Robert's

☐ Hopcroft's

☐ None of given



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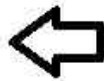
Question No : 9 of 26

Marks: 1 (Budgeted Time 1 Min)

In DFA minimization, we construct one \_\_\_\_\_ for each group of states from the initial DFA.

Answer ( Please select your correct option )

- ☐ State
- ☐ NFA
- ☐ PDA
- ☐ None of given



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Question No : 10 of 26

Marks: 1 (Budgeted Time 1 Min)

In Flex specification file, different sections are separated by \_\_\_\_\_.

Answer ( Please select your correct option )

☐ %%



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☐ &&

☐ ##

☐ None of given

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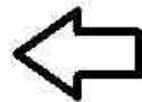
Question No : 11 of 26

Marks: 1 (Budgeted Time 1 Min)

Recursive \_\_\_\_ parsing is done for LL(1) grammar.

Answer ( Please select your correct option )

☐ Decent



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☐ Ascent

☐ Forward

☐ None of the given

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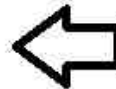
Question No : 12 of 26

Marks: 1 (Budgeted Time 1 Min)

Parser takes tokens from scanner and tries to generate \_\_\_\_\_.

Answer ( Please select your correct option )

- ☐ Binary Search tree
- ☐ Parse tree.
- ☐ Binary Search tree and Parse tree.
- ☐ None of the given



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Question No : 13 of 26

Marks: 1 (Budgeted Time 1 Min)

\_\_\_\_\_ is an important component of semantic analysis.

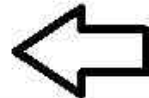
Answer ( Please select your correct option )

☐ Code checking

☒ type checking

☐ Flush checking

☐ None of the given



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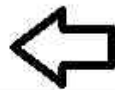
Question No : 14 of 26

Marks: 1 (Budgeted Time 1 Min)

In predictive parsing table, the rows represents \_\_\_\_\_.

Answer ( Please select your correct option )

- ☐ Terminals
- ☐ Both non-terminal and terminals
- ☒ Non-terminals
- ☐ None of the given



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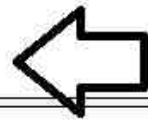
Question No : 15 of 26

Marks: 1 (Budgeted Time 1 Min)

In LL(1) parsing algorithm, \_\_\_\_ contains a sequence of grammar symbols.

Answer ( Please select your correct option )

☐ Stack



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☐ Link List

☐ Array

☐ None of the given.

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Question No : 16 of 26

Marks: 1 (Budgeted Time 1 Min)

Consider the grammar

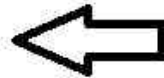
$A \rightarrow B C D$

$B \rightarrow h B \mid \varepsilon$

$C \rightarrow C g \mid g \mid C h \mid i$

Answer ( Please select your correct option )

☐ h, g, i



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☐ g

☐ h

☐ None of the given.

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Question No : 17 of 26

Marks: 1 (Budgeted Time 1 Min)

Consider the grammar

$$A \rightarrow B C D$$
$$B \rightarrow h B \mid \varepsilon$$
$$C \rightarrow C g \mid g \mid C h \mid i$$

first of B is

Answer ( Please select your correct option )

☐ h, i

☐ h,  $\varepsilon$

☐ g

☐ None of the given.



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Question No : 17 of 26

Marks: 1 (Budgeted Time 1 Min)

$A \rightarrow B C D$   
 $B \rightarrow h B | \epsilon$   
 $C \rightarrow C g | g | C h | i$   
 $D \rightarrow A B | \epsilon$

First of B is \_\_\_\_\_.

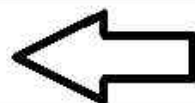
Answer ( Please select your correct option )

☐ h, i

☒ h,  $\epsilon$

☐ g

☐ None of the given.



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Question No : 18 of 26

Marks: 1 (Budgeted Time 1 Min)

Consider the grammar

$$A \rightarrow B C D$$

$$B \rightarrow h B \mid \varepsilon$$

$$C \rightarrow C g \mid g \mid C h \mid i$$

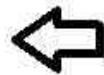
Answer ( Please select your correct option )

☐ h, g

☐ h

☐ h, g, i,  $\varepsilon$

☐ None of the given



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Question No : 18 of 26

Marks: 1 (Budgeted Time 1 Min)

$A \rightarrow B C D$   
 $B \rightarrow h B \mid \varepsilon$   
 $C \rightarrow C g \mid g \mid C h \mid i$   
 $D \rightarrow A B \mid \varepsilon$

First of D is \_\_\_\_\_.

Answer ( Please select your correct option )

☐ h, g

☐ h

☐ h, g, i,  $\varepsilon$

☐ None of the given



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Question No : 19 of 26

Marks: 1 (Budgeted Time 1 Min)

Consider the grammar

$$A \rightarrow B C D$$

$$B \rightarrow h B \mid \varepsilon$$

$$C \rightarrow C g \mid g \mid C h \mid i$$

Answer ( Please select your correct option )

☐ h, \$

☐ i

☐ g, \$

☐ None of the given.

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Question No : 19 of 26

Marks: 1 (Budgeted Time 1 Min)

$A \rightarrow B C D$   
 $B \rightarrow h B | \epsilon$   
 $C \rightarrow C g | g | C h | i$   
 $D \rightarrow A B | \epsilon$

Follow of D is \_\_\_\_.

Answer ( Please select your correct option )

☐ h, \$

☐ i

☐ g, \$

☐ None of the given.

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Question No : 20 of 26

Marks: 1 (Budgeted Time 1 Min)

\_\_\_\_\_ parsers never shifts into an error state.

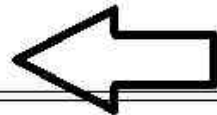
Answer ( Please select your correct option )

☐ LS

☐ LT

☐ LR

☐ LP



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Marks: 2 (Budgeted Time 4 Min)

Answer ( Please [click here](#) to Add Answer )



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Question No : 22 of 26

Marks: 2 (Budgeted Time 4 Min)

How linker plays an important role with respect to compiler construction?

Answer ( Please [click here](#) to Add Answer )



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Question No : 23 of 26

Marks: 3 (Budgeted Time 6 Min)

Can we call shift-reduce parsing as bottom up parsing? Justify your answer with reason.

Answer ( Please [click here](#) to Add Answer )



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Question No : 24 of 26

Marks: 3 (Budgeted Time 6 Min)

Considering the following grammar, calculate the first set of non-terminals S, A and B.

$S \rightarrow AB$

$A \rightarrow a \mid \epsilon$

$B \rightarrow b \mid \epsilon$

Answer ( Please [click here to Add Answer](#) )



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Question No : 25 of 26

Marks: 5 (Budgeted Time 10 Min)

Suppose that you are going to construct a compiler for a regular language and currently you are constructing a suitable predictive parsing from the grammar. If you have a production rule which is not clear to expand a non-terminal then how will you handle this situation and what will you name this procedure.

Answer ( Please [click here](#) to Add Answer )



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Considering string "ab", show that the following grammar is ambiguous using parse trees. The  $\epsilon$  below is epsilon.

$$S \rightarrow ABAB$$
$$A \rightarrow aA \mid \epsilon$$
$$B \rightarrow bB \mid \epsilon$$

Answer ( Please [click here](#) to Add Answer )



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