(DIV A) - System Software Quiz 1 (03-03-2022)

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Name *

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1. Question *

The most common use for ORG is to specify ----- address for the program in a computer without an operating system.

a. Start
b. Compile
c. Bind
d. End

- (●) A
- ( ) B
- ( ) C
- ( ) D

2. Question *

Three type assembly language statement are:

a. Imperative statements, declaration statements and assembler directives
b. Imperative statements, declaration statements and micro directives
c. imperative statements, ASCII code and assembler directives
d. EQU, ORIGIN and LTORG

- (●) A
- ( ) B
- ( ) C
- ( ) D

3. Question *

Given the following source program:
Show the content of the symbol table at the end of PASS 1.

```
START 100
MOVER   AREG, X
MOVER   BREG, Y
ADD    AREG, X
MOVEM AREG, X
X DC '10'
Y DC '15'
END
```

a. Symbol X – 100, Y - 101
b. Symbol X – 104, Y - 103
c. Symbol X – 103, Y - 105
d. Symbol X – 104, Y - 105

- ○ A
- ○ B
- ○ C
- ◉ D

4. Question *

If the parameter and arguments were associated with each other according to their position in the macro prototype and the macro invocation statement, then these parameters in macro definitions are called as ------ parameters.

a. Keyword
b. Positional
c. Keyword and positional
d. Passing

- ○ A
- ◉ B
- ○ C
- ○ D

5. Question *

Expansion time loops can be written using expansion time variables and expansion time control transfer statement ------ and -------.

a. MACRO, MACROM
b. START, ORIGIN
c. AIF, AGO
d. START, END

- ○ A
- ○ B
- ◉ C
- ○ D

6. Question *

What is the lexical expansion pf the model statements. Following the rule of positional association, values of the formal parameters are:

```
MACRO
INCR_M    &MEM_VAL, &INCR_VAL,  &REG
MOVER     &REG, &MEM_VAL
ADD       &REG,   &INCR_VAL
MOVEM     &REG, &MEM_VAL
MEND
```

formal parameters	value
MEM_VAL	A
INCR_VAL	B
REG	AREG

a. Lexical expansion of the model statements now leads to the code as follows :

```
+    MOVER    AREG, A
+    ADD      AREG, B
+    MOVEM    AREG, A
```

b. Lexical expansion of the model statements now leads to the code as follows :

```
+    MOVER    AREG, A
+    MOVEM    AREG, B
+    ADD      AREG, B
```

c. Lexical expansion of the model statements now leads to the code as follows :

```
+    MOVEM    AREG, A
+    ADD      AREG, A
+    MOVER    AREG, A
```

d. None of these

- (●) A
- ( ) B
- ( ) C
- ( ) D

7. Question *

A model statement contain call for another macro is called as -------.

a. Referential macro call
b. Nested macro call
c. Inbuilt macro call
d. All of these

- ○ A
- ◉ B
- ○ C
- ○ D

8. Question *

State true or false: Statement: A->A|B B->ε is an ambiguous grammar

a. True
b. False

- ◉ A
- ○ B

9. Question *

A language L is defined by L = {$0^n 1^n$ | n ≥ 1}. Which of the following definitions generates the same language as L?
a. E → 0E1| 01
b. (01)| (0011)
c. $0^* 1^*$
d. All of these

- (●) A
- ( ) B
- ( ) C
- ( ) D

10. Question *

Given the following expression grammar:
E -> E * F | F+E | F
F -> F-F | id
Which of the following is true?
a. In the given grammar * has higher precedence than -
b. In the given grammar + has higher precedence than *
c. In the given grammar - has higher precedence than *
d. None of the above

- ( ) A
- ( ) B
- (●) C
- ( ) D

11. Question *

A _____ is a string of characters which form a ---------.

a. Lexeme, syntactic unit
b. Lex, syntactic unit
c. Lexeme & Lex, semantic unit
d. None of the mentioned

- (●) A
- ( ) B
- ( ) C
- ( ) D

12. Question *

In a compiler, keywords of a language are recognized during-

a. The code generation
b. The lexical analysis of the program
c. Dataflow analysis
d. Parsing of the program

- ( ) A
- (●) B
- ( ) C
- ( ) D

13. Question *

The context free grammar S -> SS | 0S1 | 1S0 | ε generates -------

a. Unequal number of 0's and 1's
b. Number of 0's followed by any number of 1's
c. None of the mentioned
d. Equal number of 0's and 1's

- ○ A
- ○ B
- ○ C
- ◉ D

14. Question *

Let us now consider the following grammar:
Set of alphabets ∑ = {0, ..., 9, +, *, (,)}

E -> I
E -> E + E
E -> E * E
E -> (E)
I -> ε | 0 | 1 | ... | 9

From the above grammar String 3*2+5 can be derived in 2 ways which 2 ways are correct:

a. I) First leftmost derivation II) Second leftmost derivation

E=>E*E
=>I*E
=>3*E+E
=>3*I+E
=>3*2+E
=>3*2+I
=>3*2+5

E=>E+E
=>E*E+E
=>I*E+E
=>3*E+E
=>3*I+E
=>3*2+I
=>3*2+5

b. I) First leftmost derivation II) Second leftmost derivation

E=>E*E
=>I*E
=>3*E+E
=>3*I+E
=>2*3+E
=>2*3+I
=>3*2+5

E=>E+E
=>E*E+E
=>I*E+E
=>3*E+E
=>3*I+E
=>2*3+I
=>3*2+5

c. I) First leftmost derivation II) Second leftmost derivation

E=>E*E
=>I*E
=>3*E+E
=>3*2+I
=>3*2+5

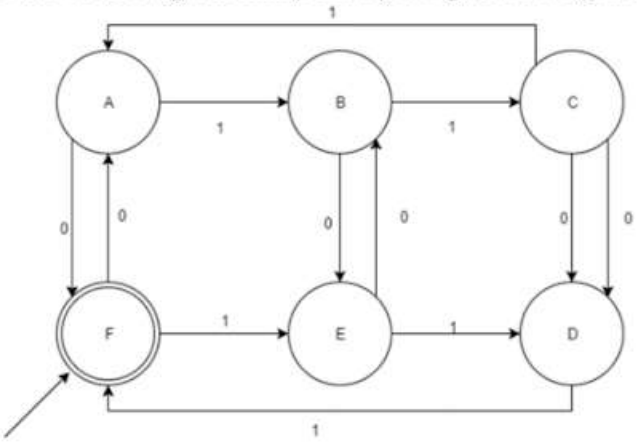
E=>E+E
=>E*E+E
=>I*E+E
=>3*2+I
=>3*2+5

d. None of these

- (●) A
- ( ) B
- ( ) C
- ( ) D

15. Question *

Which of the following x is accepted by the given DFA (x is a binary string ∑= {0, 1})?



a. divisible by 3 and 2
b. divisible by 2
c. divisible by 2 and 3
d. divisible by 3

- (●) A
- ( ) B
- ( ) C
- ( ) D

16. Question *

The sum of minimum and maximum number of final states for a DFA n states is equal to:

a. n+2
b. n
c. n-1
d. n+1

- ○ A
- ○ B
- ○ C
- ◉ D

17. Question *

Here is a context-free grammar G: S → AB A → 0A1 | 2 B → 1B | 3A.
Which of the following strings are in L (G)?
a. 021300211
b. 022111300211
c. None of the mentioned
d. Both of the mentioned

- ○ A
- ○ B
- ○ C
- ◉ D

18. Question *

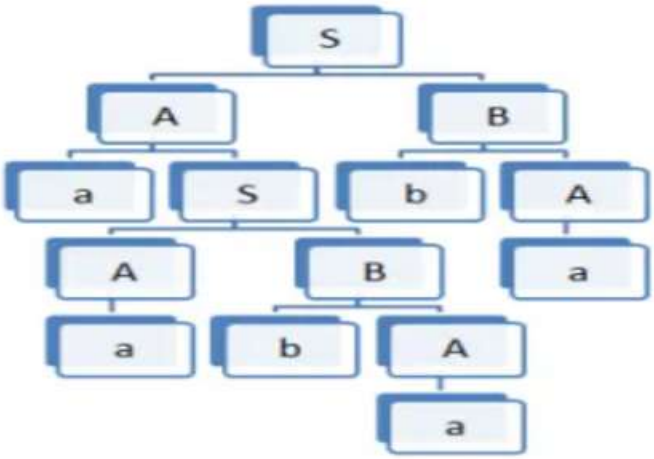
The minimum number of productions required to produce a language consisting of palindrome string over ∑ = {a, b} is

a. 3
b. 5
c. 7
d. 6

- [ ] A
- [x] B
- [ ] C
- [ ] D

19. Question *

The parse tree below represents a rightmost derivation according to the grammar S → AB, A → aS|a, B → bA.
Which of the following are right-sentential forms corresponding to this derivation?



a. aAbAba
b. aababa
c. aABba
d. aSba

- ○ A
- ◉ B
- ○ C
- ○ D

20. Question *

The grammar G: S → SS | a | b is ambiguous. Check all and only the strings that have exactly two leftmost derivations in G.

a. bbb
b. ab
c. Both of the mentioned
d. None of the mentioned

- ○ A
- ○ B
- ◉ C
- ○ D

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