(DIV A) Quiz 2(SS) - (26-04-2022)

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1. Question *

What is the grammar for the equation below?

S -> BB

B -> bB | e

a. SLR(1) & not LL(1)
b. LL(1)
c. LALR(1) but not SLR(1)
d. LR(1) but not SLR(1)

- ○ A
- ○ B
- ◉ C
- ○ D

2. Question *

Consider the grammar

B→AB'

B'→+AB'|ε

A→CA'

A'→*CA'|ε

C→(B)|id

FOLLOW(C) will be--------

a. { +, *,), $ }
b. {+,), $ }
c. {*,), $}
d. {+, (,), * }

- (●) A
- ( ) B
- ( ) C
- ( ) D

3. Question *

How could we debug a script?

a. Use of JavaScript Validator & Debugger
b. Use of JavaScript Interpreter
c. Use of JavaScript Validator
d. Use of JavaScript Debugger

- ○ A
- ○ B
- ○ C
- ◉ D

4. Question *

The system software that converts source code to object code is referred to as

a. Assembler
b. Compiler
c. Language processor
d. Interpreter

- ○ A
- ○ B
- ◉ C
- ○ D

5. Question *

Which loader function is performed by the assembler under an absolute loading scheme?

a. Allocation
b. Re-allocation
c. Linking
d. Loading

- ○ A
- ◉ B
- ○ C
- ○ D

6. Question *

The set {a^n b^n | n=1, 2, 3, ...} can be generated by the CFG

a. S -> ab | aSb | ε
b. S -> aaSbb | ab
c. S -> ab | aSb
d. None of these

- ○ A
- ○ B
- ◉ C
- ○ D

7. Question *

Find the correct pass numbers for each of the following activities:

i. object code generation
ii. literals added to literals table
iii. listing printed
iv. address resolution of local symbols that occur in a two pass assemblers

a. 1, 2, 1, 2
b. 2, 1, 2, 1
c. 2, 1, 1, 2
d. 1, 2, 2, 2

- ○ A
- ○ B
- ◉ C
- ○ D

8. Question *

The maximum reduce moves that a bottom-up parser can take for grammar without epsilon and the unit-production (of type A -> ϵ as well as A -> a) for parsing the strings with n tokens would be:

a. 2^n
b. 2n-1
c. n-1
d. n/2

- ○ A
- ○ B
- ○ C
- ◉ D

9. Question *

The regular expression denote a language comprising all possible strings of even length over the alphabet (0,1)

a. 1 + 0(1+0)*
b. (0+1)(1+0)*
c. (1+0)
d. (00+0111+10)*

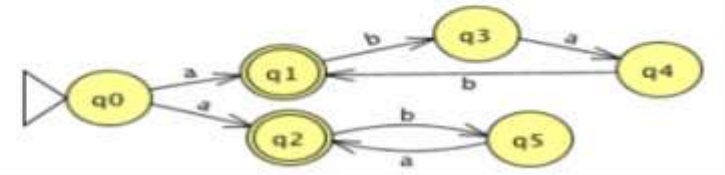
- ○ A
- ○ B
- ○ C
- ◉ D

10. Question *

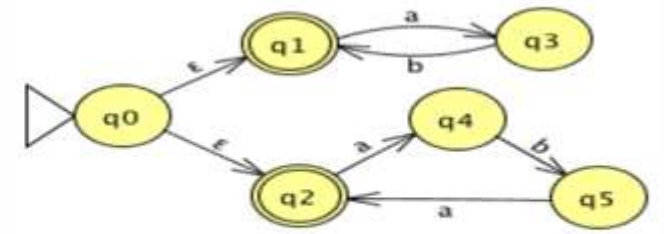
Which NDFA correctly represents the following RE:

a(bab)*Ua(ba)*

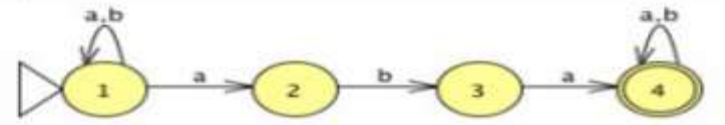
a)



b)



c)



d) None of the mentioned

a. a
b. b
c. c
d. d

- (●) A
- ( ) B
- ( ) C
- ( ) D

11. Question *

Consider the augmented grammar with {+, *, (,), id} as the set of terminals.

S' -> S
S -> S + R | R
R -> R * P | P
P -> (S) | id

If I0 is the set of two LR(0) items {[S'->S.], [S->S. + R]}, then goto(closure(I0), +) contains exactly _____ items.

a. 5
b. 10
c. 7
d. 9

- (●) A
- ( ) B
- ( ) C
- ( ) D

12. Question *

Consider the grammar given below:

S → Aa
A → BD
B → b | ε
D → d | ε

Let a, b, d, and $ be indexed as follows:

a	b	d	$
3	2	1	0

Compute the FOLLOW set of the non-terminal B and write the index values for the symbols in the FOLLOW set in the descending order. (For example, if the FOLLOW set is {a, b, d, $}, then the answer should be 3210)

a. 32
b. 31
c. 30
d. 21

- ○ A
- ○ B
- ○ C
- ◉ D

13. Question *

Consider the following source code :

```
c = a + b
d = c
c = c – e
a = d – e
b = b * e
b = d/b
```

Which of the following is correct optimization of given code?

a.
```
c = a + b
t = b * e
a = d – e
b = d/t
c = a
```

b.
```
c = a + b
d = c
c = c – e
a = d – e
b = d/b
```

c.
```
d = c
c = c – e
a = d – e
b = b * e
b = d/b
```

d. None of the above

- ○ A
- ○ B
- ○ C
- ◉ D

14. Question *

Assume that the SLR parser for a grammar G has n1 states and the LALR parser for G has n2 states. The relationship between n1 and n2 is

a. n1 is necessarily less than n2
b. n1 is necessarily equal to n2
c. n1 is necessarily greater than n2
d. None of the above

- ○ A
- ◉ B
- ○ C
- ○ D

15. Question *

Code generation can be considered as the?

a. first phase of compilation
b. second phase of compilation
c. third phase of compilation
d. final phase of compilation

- ○ A
- ○ B
- ◉ C
- ○ D

16. Question *

The attributes of three arithmetic operators in some programming language are given below.

Operator	Precedence	Associativity	Arity
+	High	Left	Binary
_	Medium	Right	Binary
*	Low	Left	Binary

The value of the expression 2-5+1-7*3 in this language is _____.

a. 8
b. 9
c. 10
d. 11

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

17. Question *

Consider the following grammar G

$$S \rightarrow F|H$$
$$F \rightarrow p|c$$
$$H \rightarrow d|c$$

Where S, F and H are non-terminal symbols, p, d and c are terminal symbols. Which of the following statement(s) is/are correct?

S1. LL(1) can parse all strings that are generated using grammar G.

S2. LR(1) can parse all strings that are generated using grammar G.

a. Only S1

b. Only S2

c. Both S1 and S2

d. Neither S1 and S2

- ○ A
- ○ B
- ○ C
- ◉ D

18. Question *

A canonical set of items is given below

$S \rightarrow L. > R$

$Q \rightarrow R.$

On input symbol < the set has

a. A shift-reduce conflicts and a reduce-reduce conflicts
b. A shift-reduce conflicts but not a reduce-reduce conflicts
c. A reduce-reduce conflicts but not a shift-reduce conflicts
d. Neither a shift-reduce conflicts nor a reduce-reduce conflicts

- ○ A
- ○ B
- ○ C
- ◉ D

19. Question *

Each macro phrase is preceded by the ———— symbol.

a. @
b. _
c. $
d. +

- ◉ A
- ○ B
- ○ C
- ○ D

20. Question *

Consider the following grammar.

S -> aSB| d

B -> b

The number of reduction steps taken by a bottom-up parser while accepting the string aaadbbb is _____.

a. 8
b. 9
c. 7
d. 4

- ( ) A
- ( ) B
- (•) C
- ( ) D

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