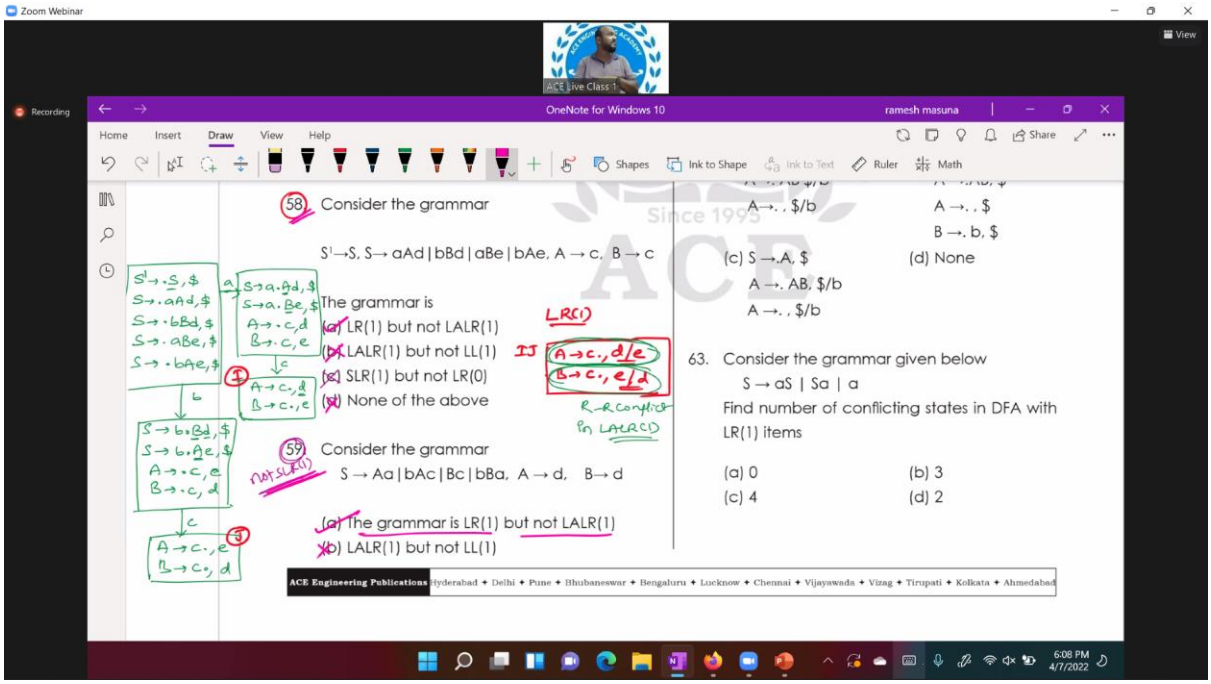
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58 Consider the grammar
S'→S, S→ aAd | bBd | aBe | bAe, A → c, B → c
The grammar is
(a) LR(1) but not LALR(1)
(b) LALR(1) but not LL(1)
(c) SLR(1) but not LR(0)
(d) None of the above
59 Consider the grammar
S → Aa | bAc | Bc | bBa, A → d, B→ d
(a) The grammar is LR(1) but not LALR(1)
(b) LALR(1) but not LL(1)
A→. , $/b
A →. , $
B →. b, $
(c) S →.A, $
A →. AB, $/b
A →. , $/b
(d) None
63. Consider the grammar given below
S → aS | Sa | a
Find number of conflicting states in DFA with LR(1) items
(a) 0
(b) 3
(c) 4
(d) 2
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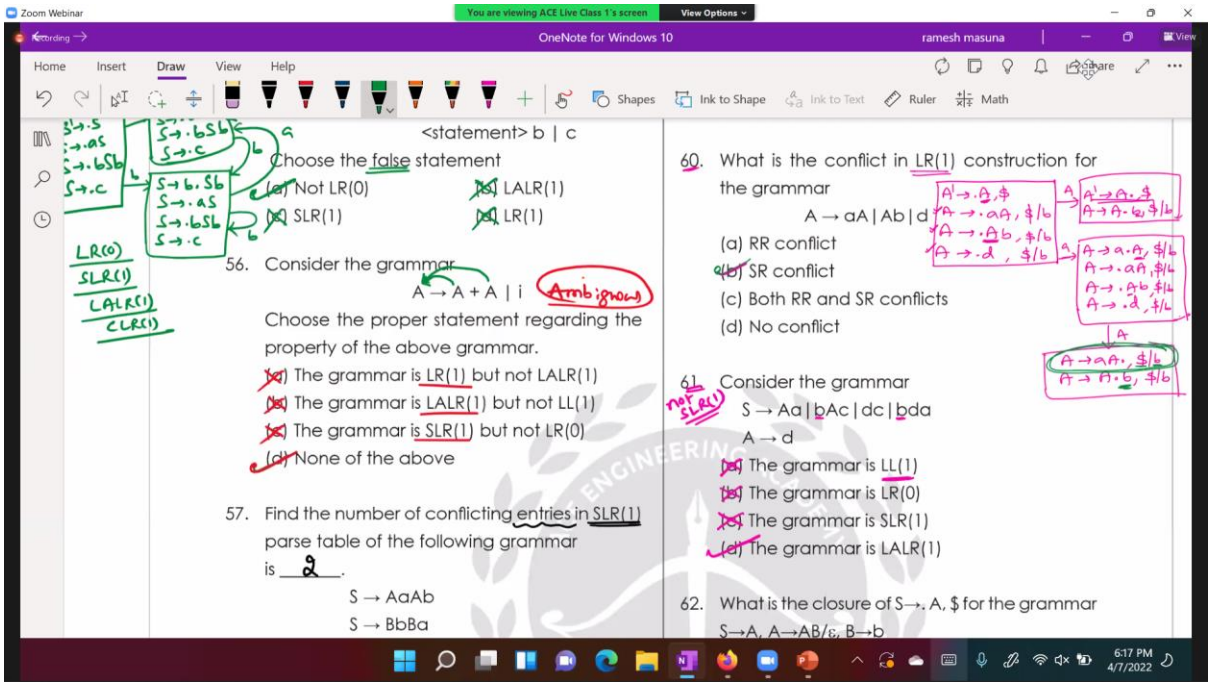
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<statement> b | c
Choose the false statement
(a) Not LR(0)
(b) LALR(1)
(c) SLR(1)
(d) LR(1)
56. Consider the grammar
A → A + A | i
Ambiguous
Choose the proper statement regarding the property of the above grammar.
(a) The grammar is LR(1) but not LALR(1)
(b) The grammar is LALR(1) but not LL(1)
(c) The grammar is SLR(1) but not LR(0)
(d) None of the above
57. Find the number of conflicting entries in SLR(1) parse table of the following grammar
is 2.
S → AaAb
S → BbBa
60. What is the conflict in LR(1) construction for the grammar
A → aA | Ab | d
(a) RR conflict
(b) SR conflict
(c) Both RR and SR conflicts
(d) No conflict
61. Consider the grammar
S → Aa | bAc | dc | bda
A → d
(a) The grammar is LL(1)
(b) The grammar is LR(0)
(c) The grammar is SLR(1)
(d) The grammar is LALR(1)
62. What is the closure of S→. A, $ for the grammar
S→A, A→AB/ε, B→b
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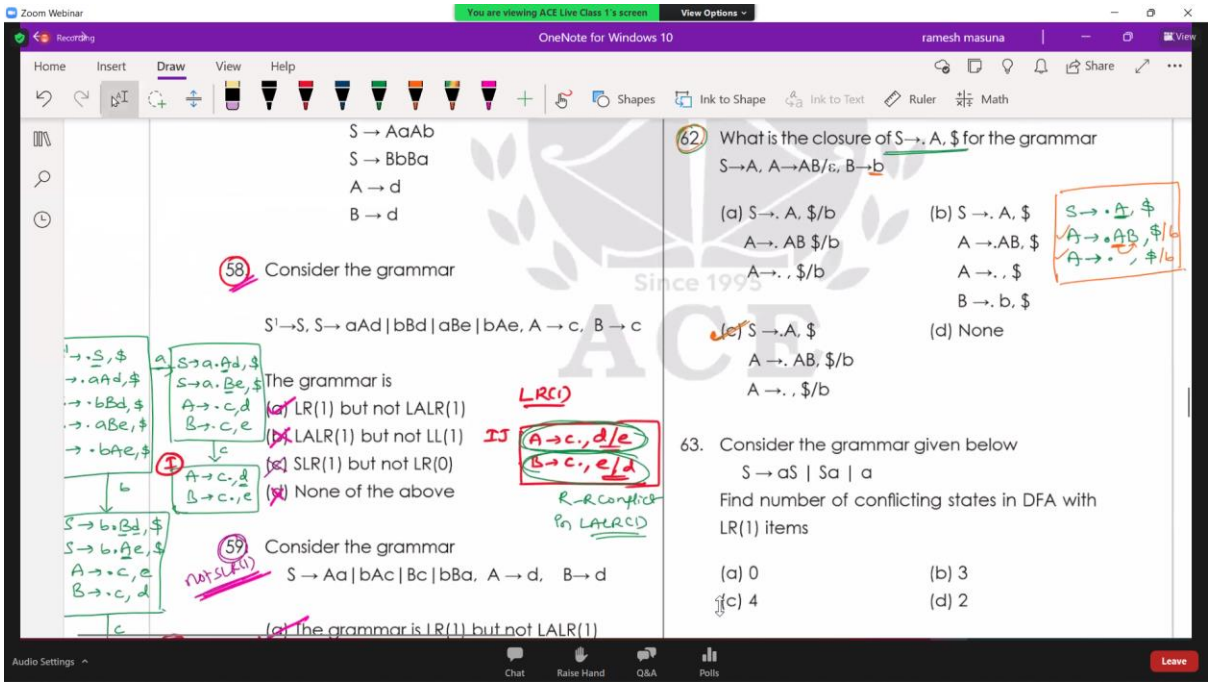
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S → AaAb
S → BbBa
A → d
B → d
58. Consider the grammar
S'→S, S→ aAd | bBd | aBe | bAe, A → c, B → c
The grammar is
(a) LR(1) but not LALR(1)
(b) LALR(1) but not LL(1)
(c) SLR(1) but not LR(0)
(d) None of the above
59. Consider the grammar
S → Aa | bAc | Bc | bBa, A → d, B→ d
(a) The grammar is LR(1) but not LALR(1)
62. What is the closure of S→. A, $ for the grammar
S→A, A→AB/ε, B→b
(a) S→. A, $/b
A→. AB $/b
A→. , $/b
(b) S →. A, $
A →.AB, $
A →. , $
B →. b, $
(c) S →.A, $
A →. AB, $/b
A →. , $/b
(d) None
63. Consider the grammar given below
S → aS | Sa | a
Find number of conflicting states in DFA with LR(1) items
(a) 0
(b) 3
(c) 4
(d) 2
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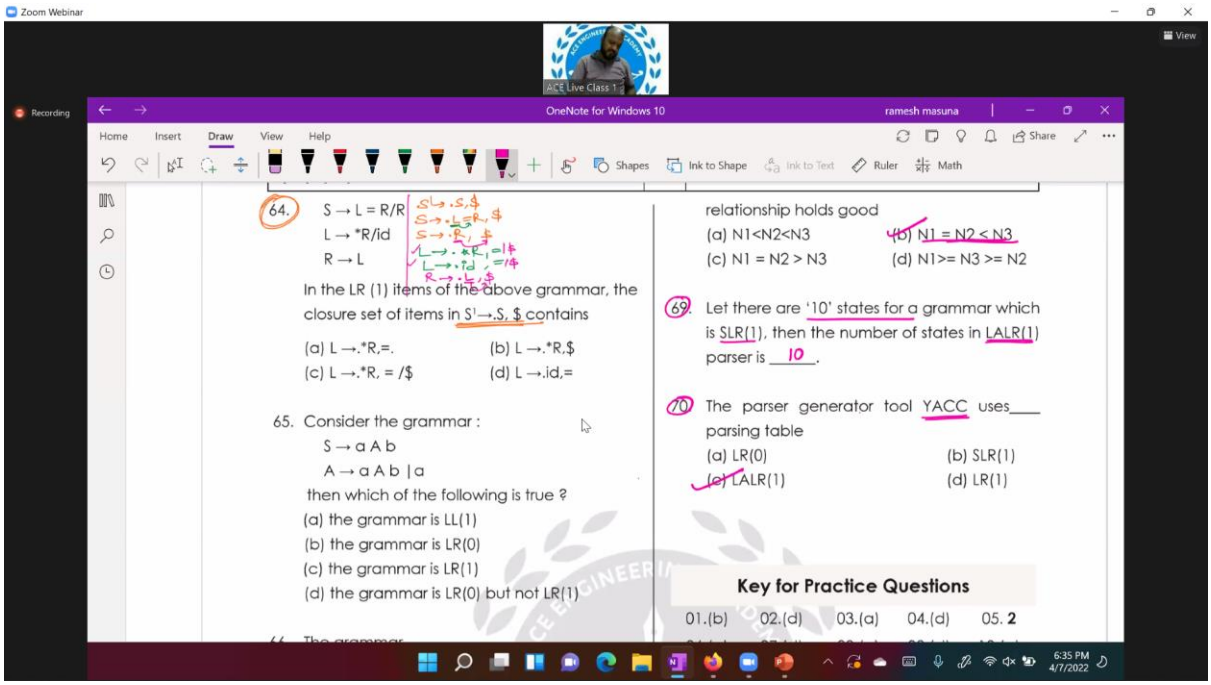
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64. S → L = R/R
L → *R/id
R → L
In the LR (1) items of the above grammar, the closure set of items in S'→.S, $ contains
(a) L →.*R,=.
(b) L →.*R,$
(c) L →.*R, = /$
(d) L →.id,=
65. Consider the grammar :
S → a A b
A → a A b | a
then which of the following is true ?
(a) the grammar is LL(1)
(b) the grammar is LR(0)
(c) the grammar is LR(1)
(d) the grammar is LR(0) but not LR(1)
relationship holds good
(a) N1<N2<N3
(b) N1 = N2 < N3
(c) N1 = N2 > N3
(d) N1>= N3 >= N2
69. Let there are '10' states for a grammar which is SLR(1), then the number of states in LALR(1) parser is 10.
70. The parser generator tool YACC uses___ parsing table
(a) LR(0)
(b) SLR(1)
(c) LALR(1)
(d) LR(1)
Key for Practice Questions
01.(b) 02.(d) 03.(a) 04.(d) 05. 2
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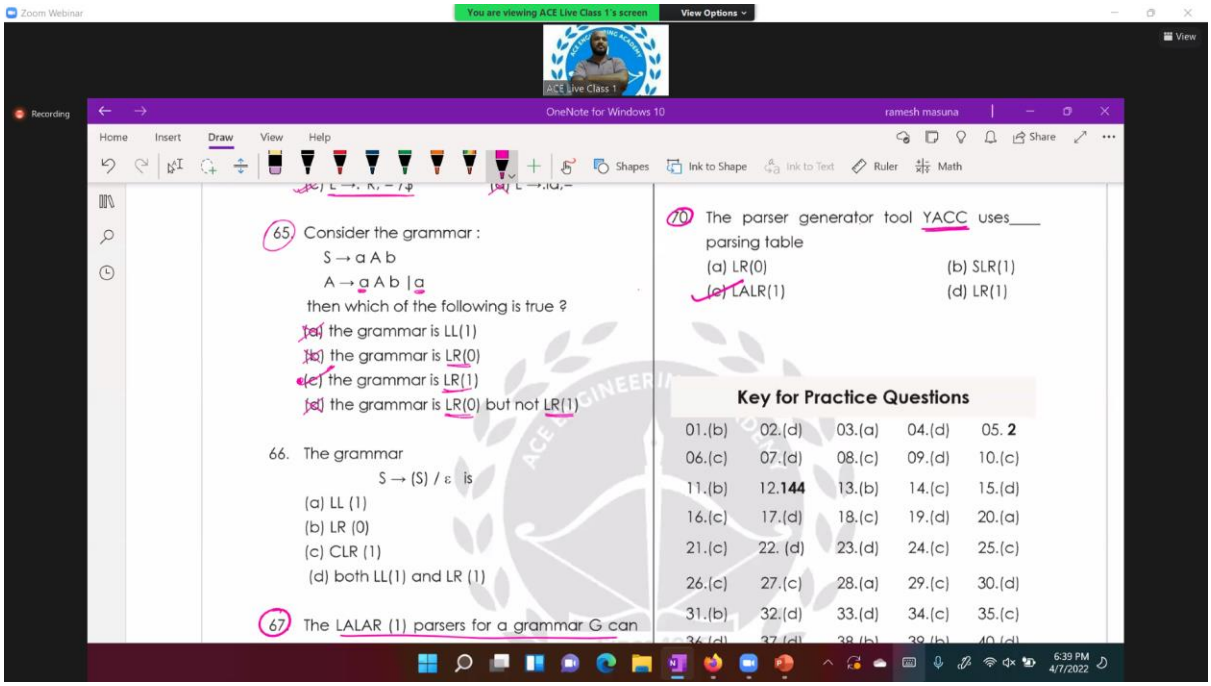
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65. Consider the grammar :
S → a A b
A → a A b | a
then which of the following is true ?
(a) the grammar is LL(1)
(b) the grammar is LR(0)
(c) the grammar is LR(1)
(d) the grammar is LR(0) but not LR(1)
66. The grammar
S → (S) / ε is
(a) LL (1)
(b) LR (0)
(c) CLR (1)
(d) both LL(1) and LR (1)
67 The LALAR (1) parsers for a grammar G can
70 The parser generator tool YACC uses____ parsing table
(a) LR(0)
(b) SLR(1)
(c) LALR(1)
(d) LR(1)
Key for Practice Questions
01.(b) 02.(d) 03.(a) 04.(d) 05. 2
06.(c) 07.(d) 08.(c) 09.(d) 10.(c)
11.(b) 12.144 13.(b) 14.(c) 15.(d)
16.(c) 17.(d) 18.(c) 19.(d) 20.(a)
21.(c) 22. (d) 23.(d) 24.(c) 25.(c)
26.(c) 27.(c) 28.(a) 29.(c) 30.(d)
31.(b) 32.(d) 33.(d) 34.(c) 35.(c)
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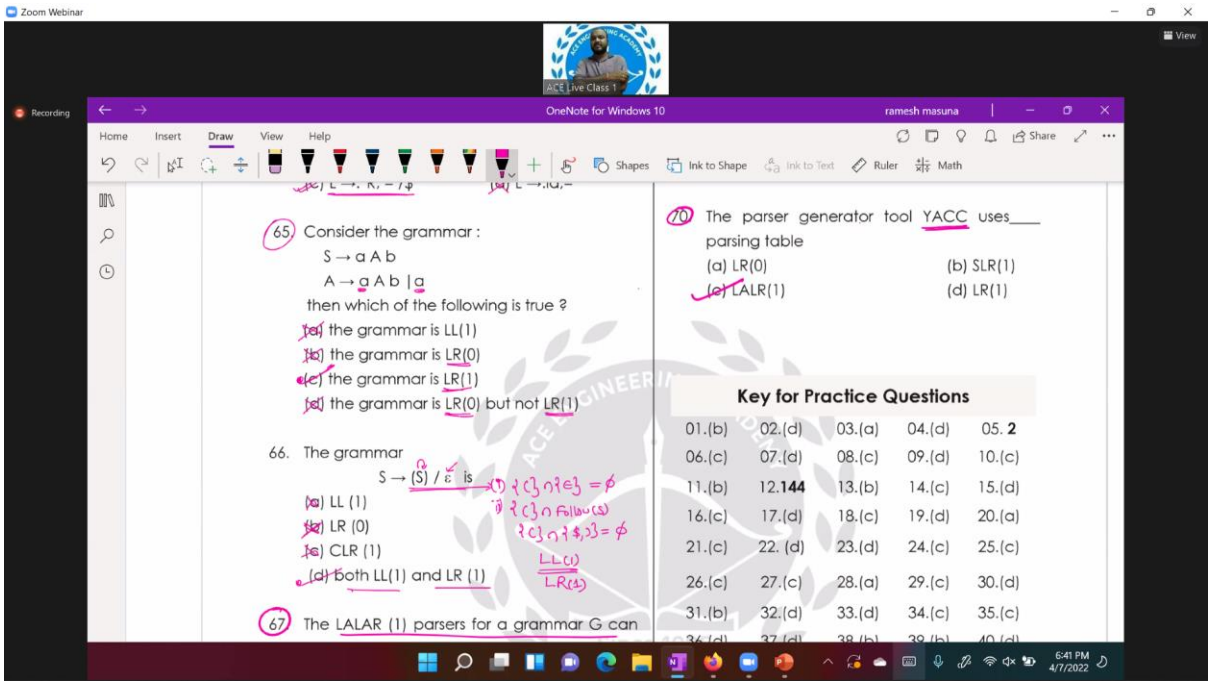
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65. Consider the grammar :
S → a A b
A → a A b | a
then which of the following is true ?
(a) the grammar is LL(1)
(b) the grammar is LR(0)
(c) the grammar is LR(1)
(d) the grammar is LR(0) but not LR(1)
66. The grammar
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(a) LL (1)
(b) LR (0)
(c) CLR (1)
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LL(1)
LR(1)
67 The LALAR (1) parsers for a grammar G can
70 The parser generator tool YACC uses____ parsing table
(a) LR(0)
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(c) LALR(1)
(d) LR(1)
Key for Practice Questions
01.(b) 02.(d) 03.(a) 04.(d) 05. 2
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11.(b) 12.144 13.(b) 14.(c) 15.(d)
16.(c) 17.(d) 18.(c) 19.(d) 20.(a)
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26.(c) 27.(c) 28.(a) 29.(c) 30.(d)
31.(b) 32.(d) 33.(d) 34.(c) 35.(c)
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Consider the augmented grammar with {+, *, (,), id} as the set of terminals

[Gate-2022]

$S^1 \rightarrow S$

$S \rightarrow S+R/R$

$R \rightarrow R*P/P$

$P \rightarrow (S)/id$

I_0: $S^1 \rightarrow .S$, $S \rightarrow .S+R$ + → $S \rightarrow S+.R$, $R \rightarrow .R*P$, $R \rightarrow .P$, $P \rightarrow .(S)$, $P \rightarrow .id$

If I_0 is the set of two LR(0) items {[$S^1 \rightarrow S.$], [$S \rightarrow S.+R$]}, then goto (closure (I_0), +) contains exactly 5 items.

I_0

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Q.25 Which of the following statements about parser is/are CORRECT?

(Gate-2018) (1 mark)

I. Canonical LR is more powerful than SLR.

II. SLR is more powerful than LALR.

III. SLR is more powerful than Canonical LR.

(a) I only (b) II only

(c) III only (d) II and III only

1.18 Which of the following statements is false? (Gate-2001) (1 mark)

(a) An unambiguous grammar has same leftmost and rightmost derivation

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

(c) LALR is more powerful than SLR

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

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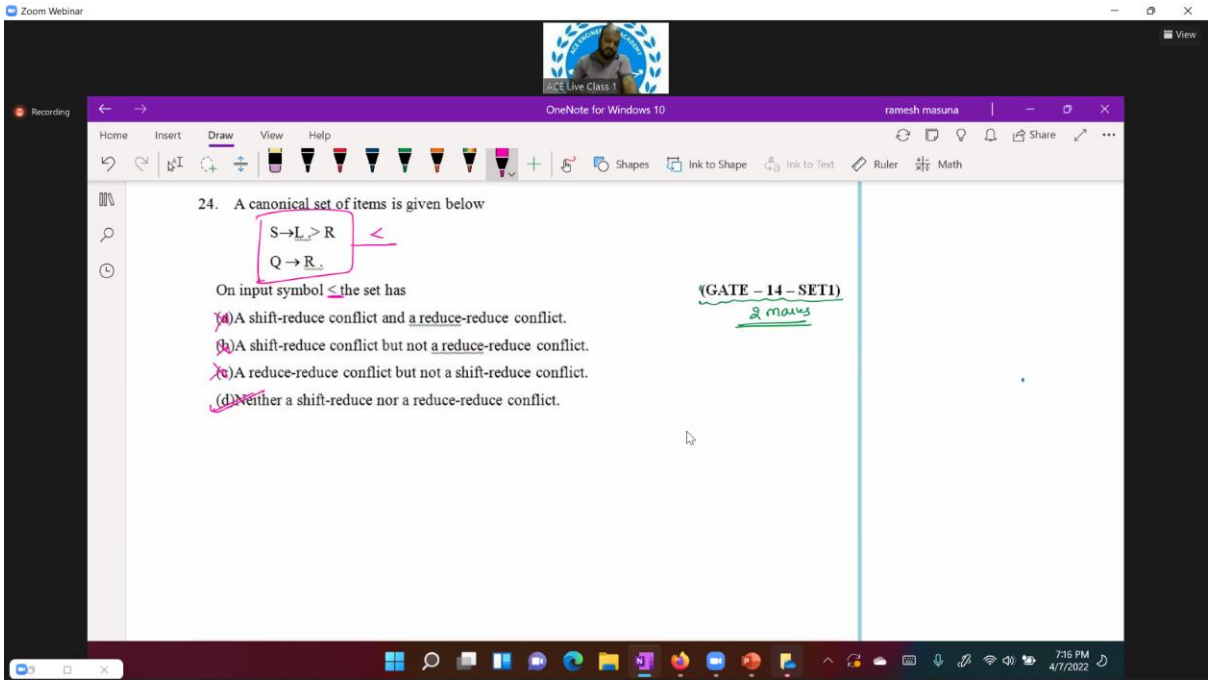
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24. A canonical set of items is given below
S→L. > R
Q→R.
On input symbol < the set has
(GATE – 14 – SET1)
2 marks
(a) A shift-reduce conflict and a reduce-reduce conflict.
(b) A shift-reduce conflict but not a reduce-reduce conflict.
(c) A reduce-reduce conflict but not a shift-reduce conflict.
(d) Neither a shift-reduce nor a reduce-reduce conflict.
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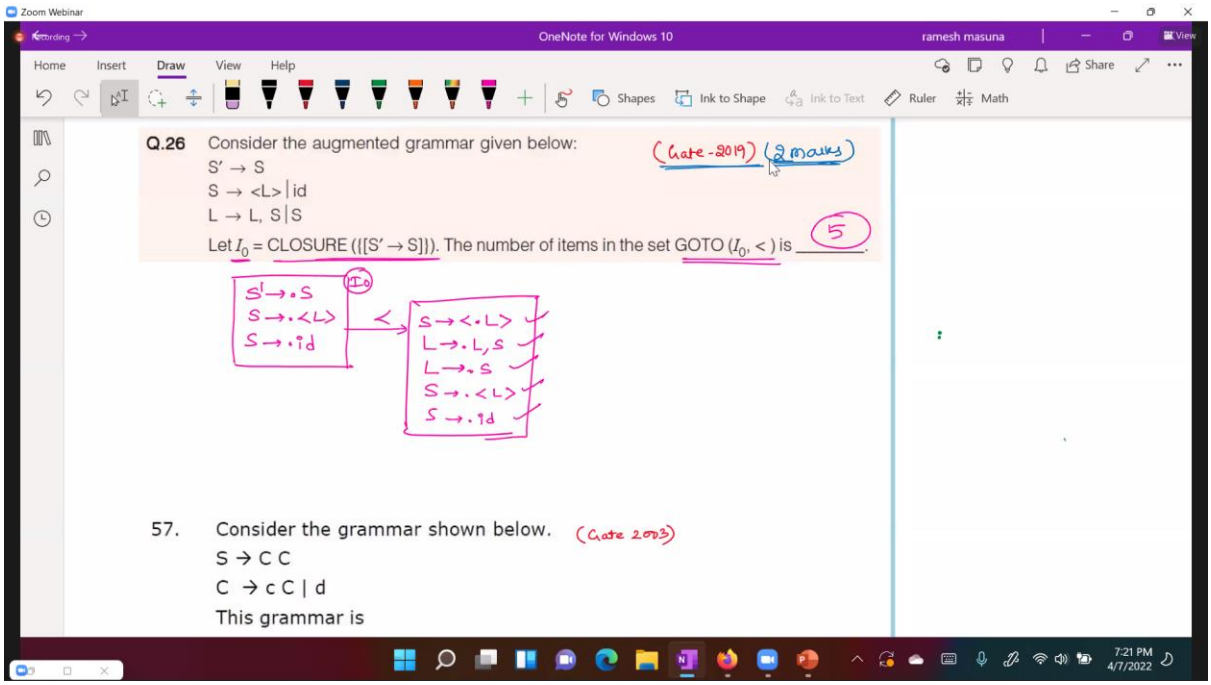
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Q.26 Consider the augmented grammar given below:
(Gate-2019) (2 marks)
S' → S
S → <L> | id
L → L, S | S
Let I_0 = CLOSURE ([S' → S]). The number of items in the set GOTO (I_0, <) is 5
I_0
S'→.S
S→.<L>
S→.id
<
S→<.L>
L→.L,S
L→.S
S→.<L>
S→.id
57. Consider the grammar shown below. (Gate 2003)
S → C C
C → c C | d
This grammar is
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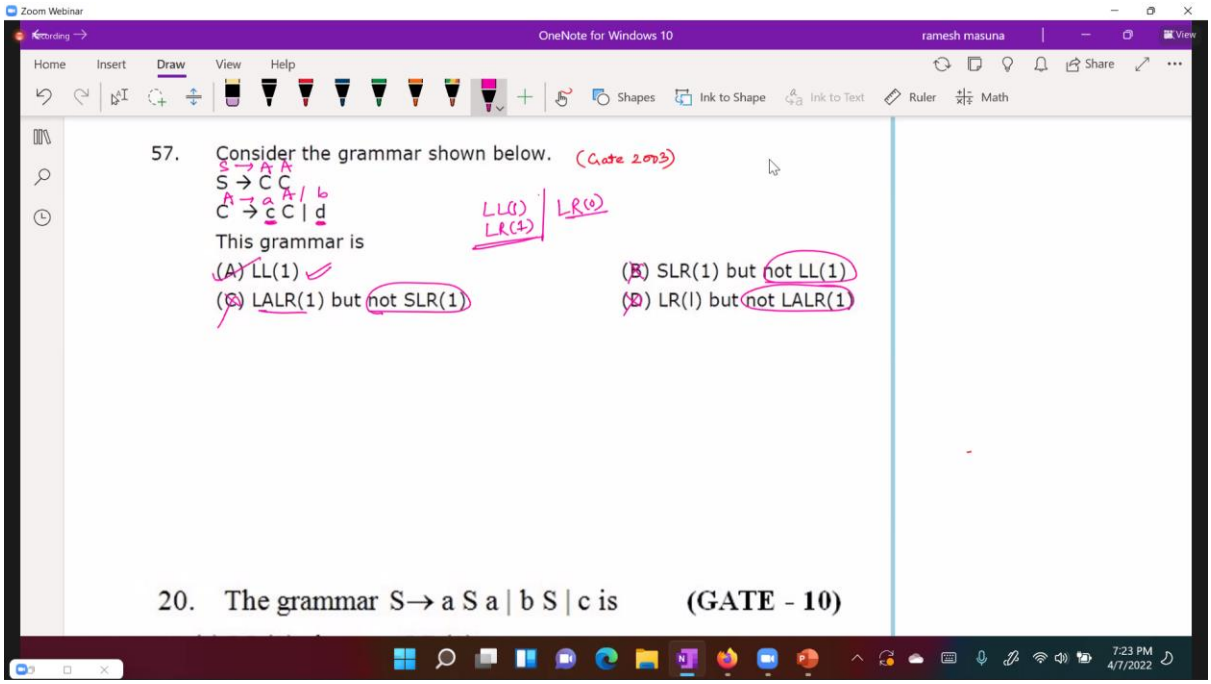
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57. Consider the grammar shown below. (Gate 2003)
S → C C
C → c C | d
This grammar is
(A) LL(1)
(B) SLR(1) but not LL(1)
(C) LALR(1) but not SLR(1)
(D) LR(I) but not LALR(1)
20. The grammar S→ a S a | b S | c is (GATE - 10)
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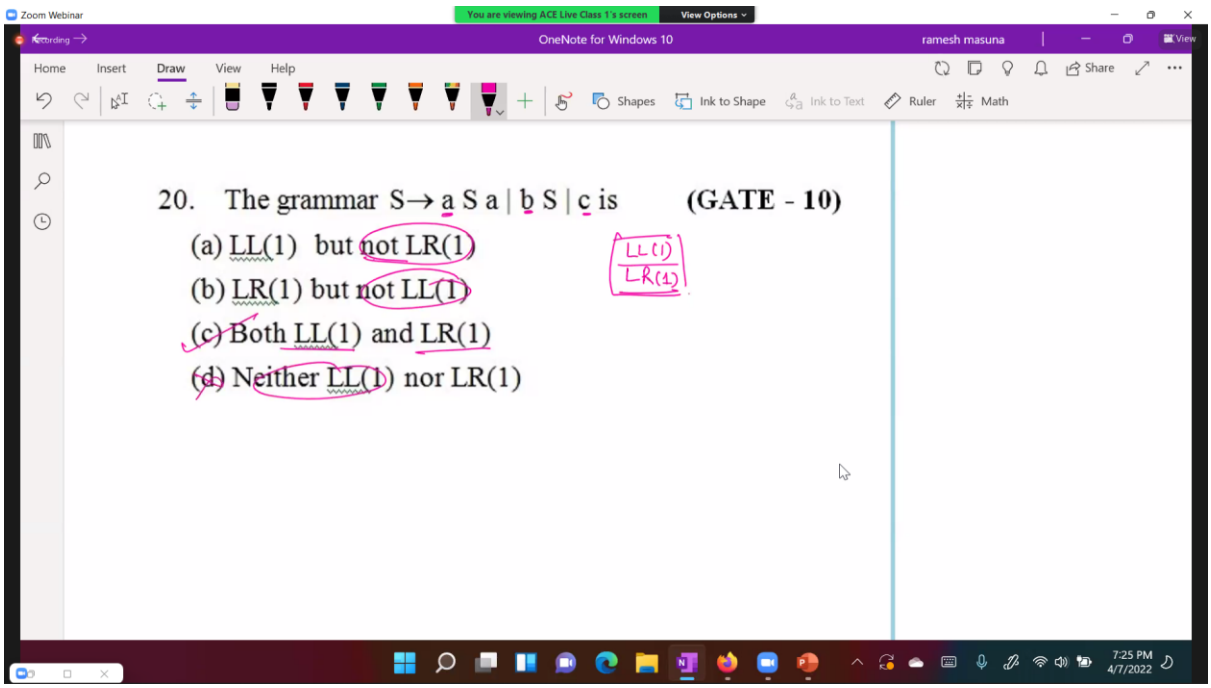
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20. The grammar S→ a S a | b S | c is (GATE - 10)
(a) LL(1) but not LR(1)
(b) LR(1) but not LL(1)
(c) Both LL(1) and LR(1)
(d) Neither LL(1) nor LR(1)
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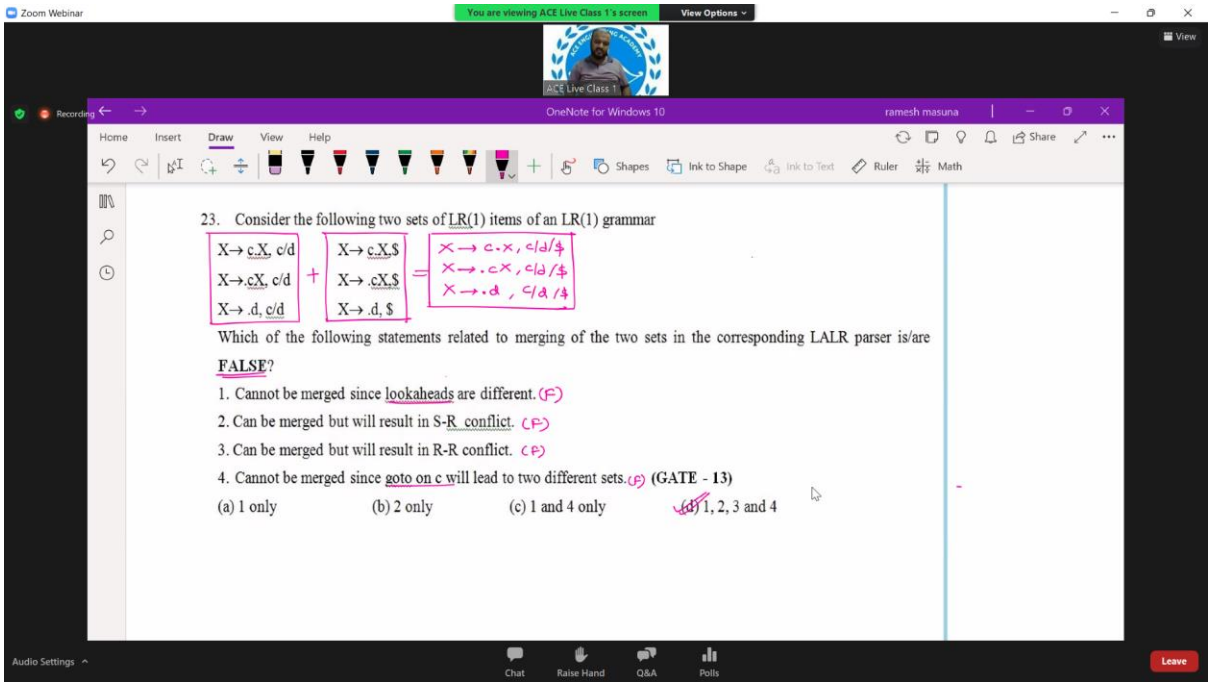
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23. Consider the following two sets of LR(1) items of an LR(1) grammar
X→ c.X, c/d
X→ .cX, c/d
X→ .d, c/d
+
X→ c.X,$
X→ .cX,$
X→ .d, $
=
X→ c.X, c/d/$
X→ .cX, c/d/$
X→ .d , c/d/$
Which of the following statements related to merging of the two sets in the corresponding LALR parser is/are FALSE?
1. Cannot be merged since lookaheads are different. (F)
2. Can be merged but will result in S-R conflict. (F)
3. Can be merged but will result in R-R conflict. (F)
4. Cannot be merged since goto on c will lead to two different sets. (F) (GATE - 13)
(a) 1 only
(b) 2 only
(c) 1 and 4 only
(d) 1, 2, 3 and 4
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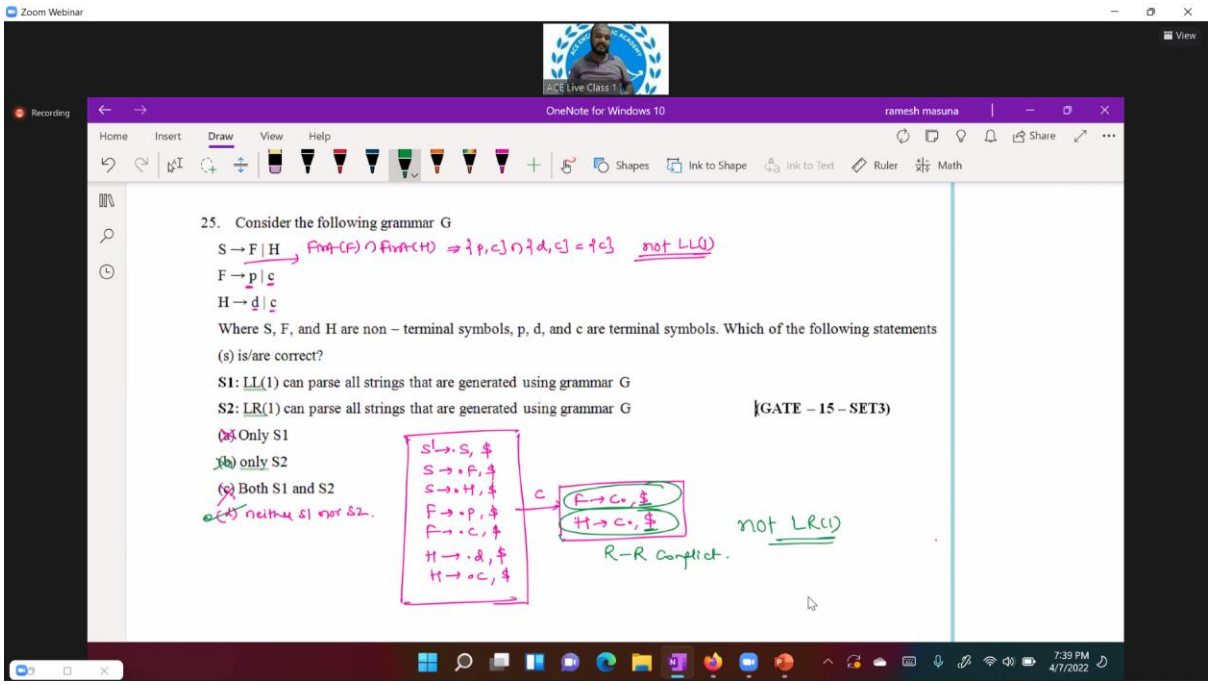
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25. Consider the following grammar G
S → F | H
First(F) ∩ First(H) ⇒ {p, c} ∩ {d, c} = {c}
not LL(1)
F → p | c
H → d | c
Where S, F, and H are non – terminal symbols, p, d, and c are terminal symbols. Which of the following statements (s) is/are correct?
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
(GATE – 15 – SET3)
(a) Only S1
(b) only S2
(c) Both S1 and S2
(d) neither S1 nor S2.
S'→.S, $
S→.F, $
S→.H, $
F→.p, $
F→.c, $
H→.d, $
H→.c, $
c
F→c., $
H→c., $
R-R Conflict.
not LR(1)
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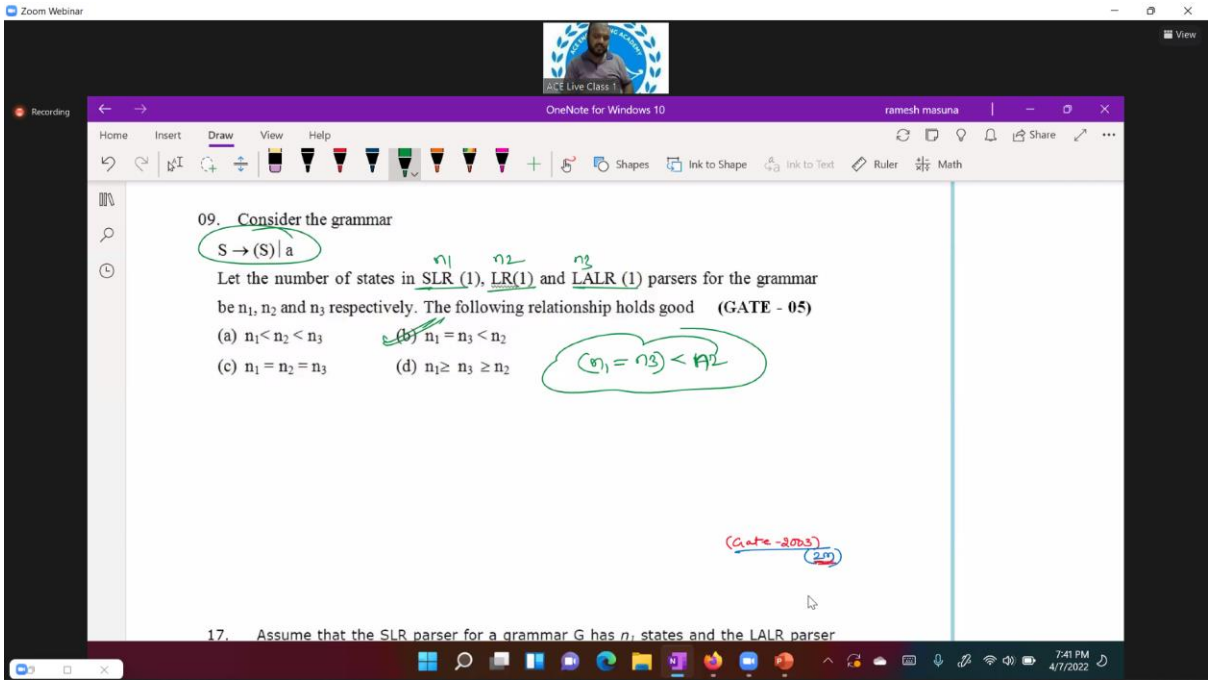
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09. Consider the grammar
S → (S) | a
Let the number of states in SLR (1), LR(1) and LALR (1) parsers for the grammar be n1, n2 and n3 respectively. The following relationship holds good (GATE - 05)
(a) n1 < n2 < n3
(b) n1 = n3 < n2
(c) n1 = n2 = n3
(d) n1 ≥ n3 ≥ n2
(Gate -2003)
2m
17. Assume that the SLR parser for a grammar G has n1 states and the LALR parser
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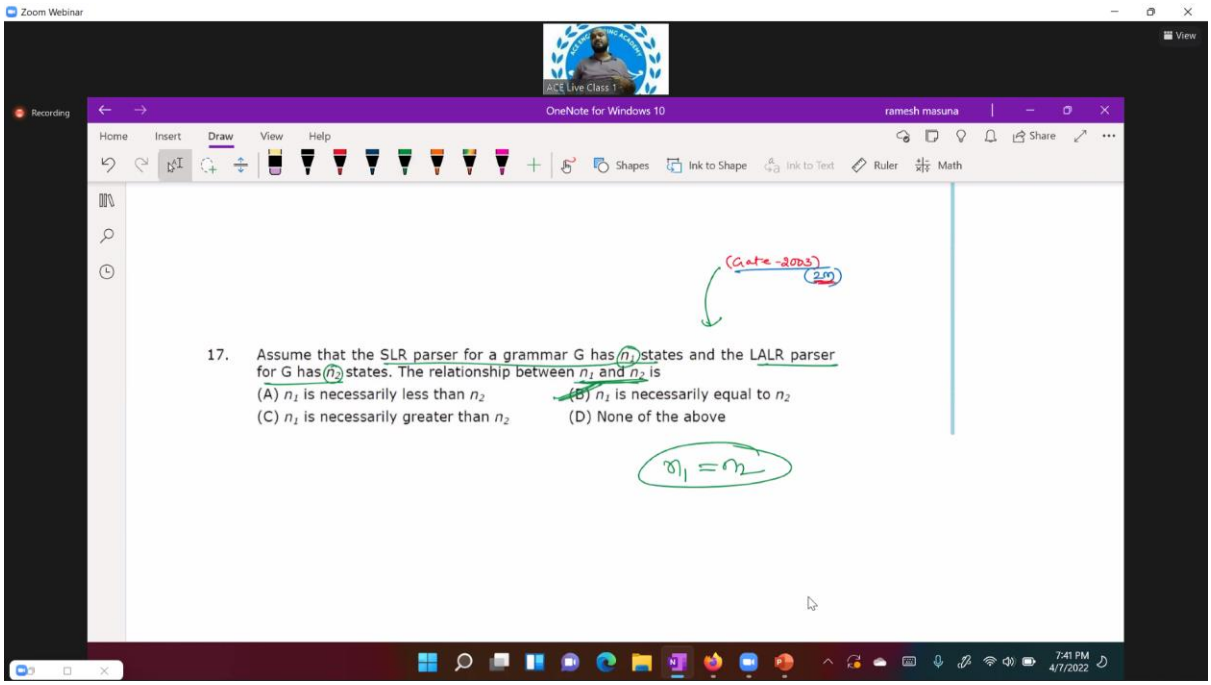
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(Gate -2003)
2m
17. Assume that the SLR parser for a grammar G has n1 states and the LALR parser for G has n2 states. The relationship between n1 and n2 is
(A) n1 is necessarily less than n2
(B) n1 is necessarily equal to n2
(C) n1 is necessarily greater than n2
(D) None of the above
n1 = n2
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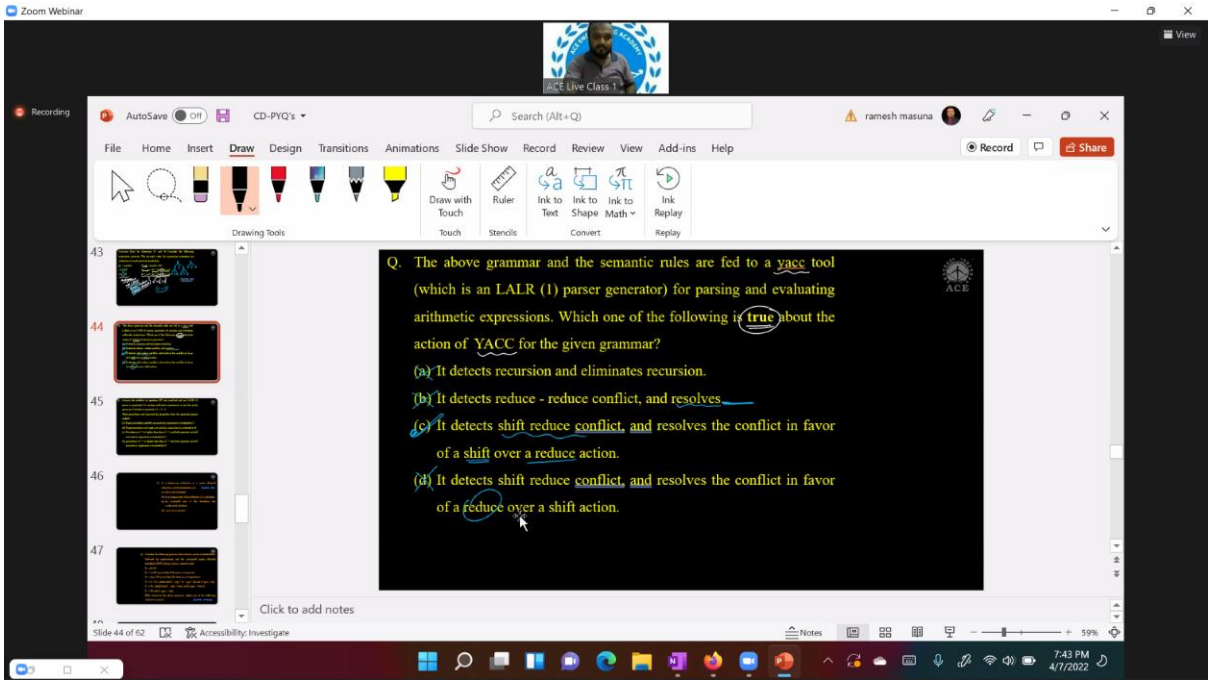
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Q. The above grammar and the semantic rules are fed to a yacc tool (which is an LALR (1) parser generator) for parsing and evaluating arithmetic expressions. Which one of the following is true about the action of YACC for the given grammar?
(a) It detects recursion and eliminates recursion.
(b) It detects reduce - reduce conflict, and resolves.
(c) It detects shift reduce conflict, and resolves the conflict in favor of a shift over a reduce action.
(d) It detects shift reduce conflict, and resolves the conflict in favor of a reduce over a shift action.
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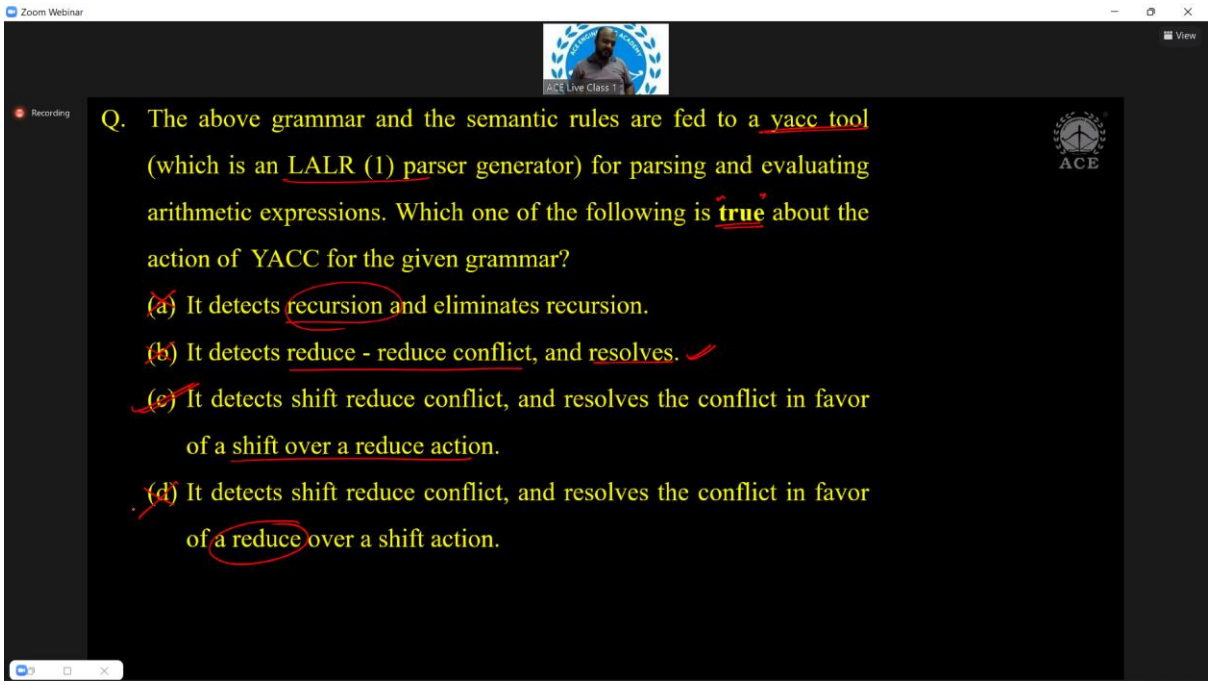
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(a) It detects recursion and eliminates recursion.
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(d) It detects shift reduce conflict, and resolves the conflict in favor of a reduce over a shift action.
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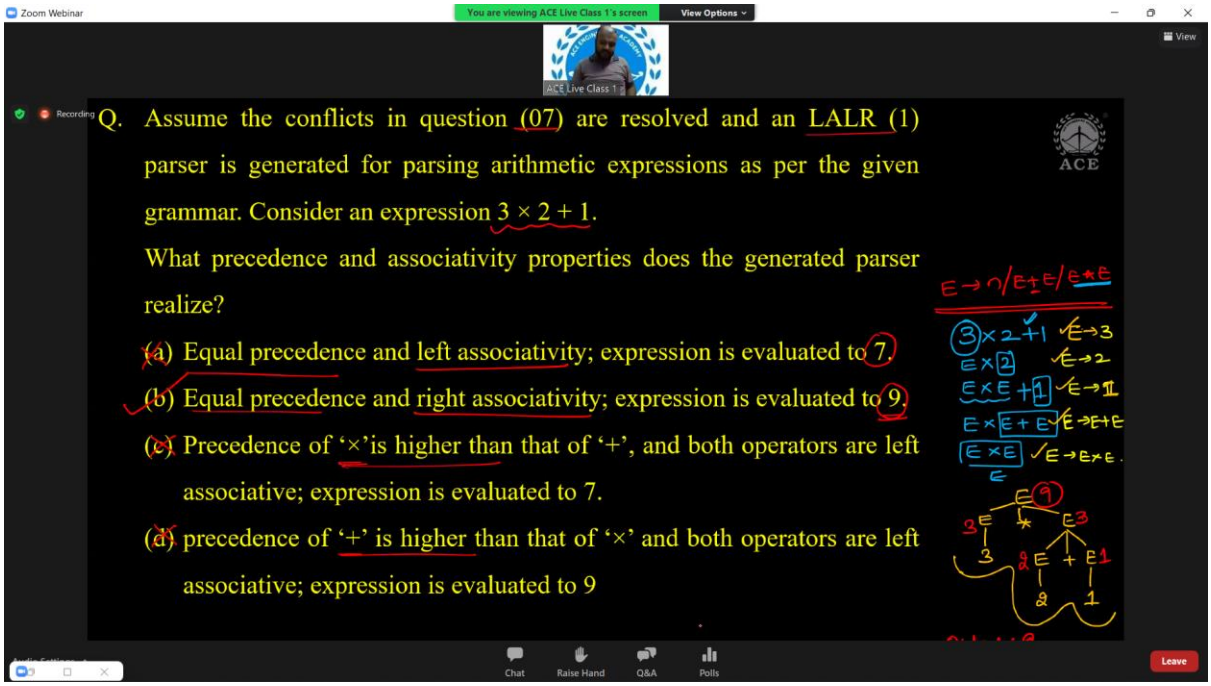
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Q. Assume the conflicts in question (07) are resolved and an LALR (1) parser is generated for parsing arithmetic expressions as per the given grammar. Consider an expression 3 × 2 + 1.
What precedence and associativity properties does the generated parser realize?
(a) Equal precedence and left associativity; expression is evaluated to 7.
(b) Equal precedence and right associativity; expression is evaluated to 9.
(c) Precedence of '×'is higher than that of '+', and both operators are left associative; expression is evaluated to 7.
(d) precedence of '+' is higher than that of '×' and both operators are left associative; expression is evaluated to 9
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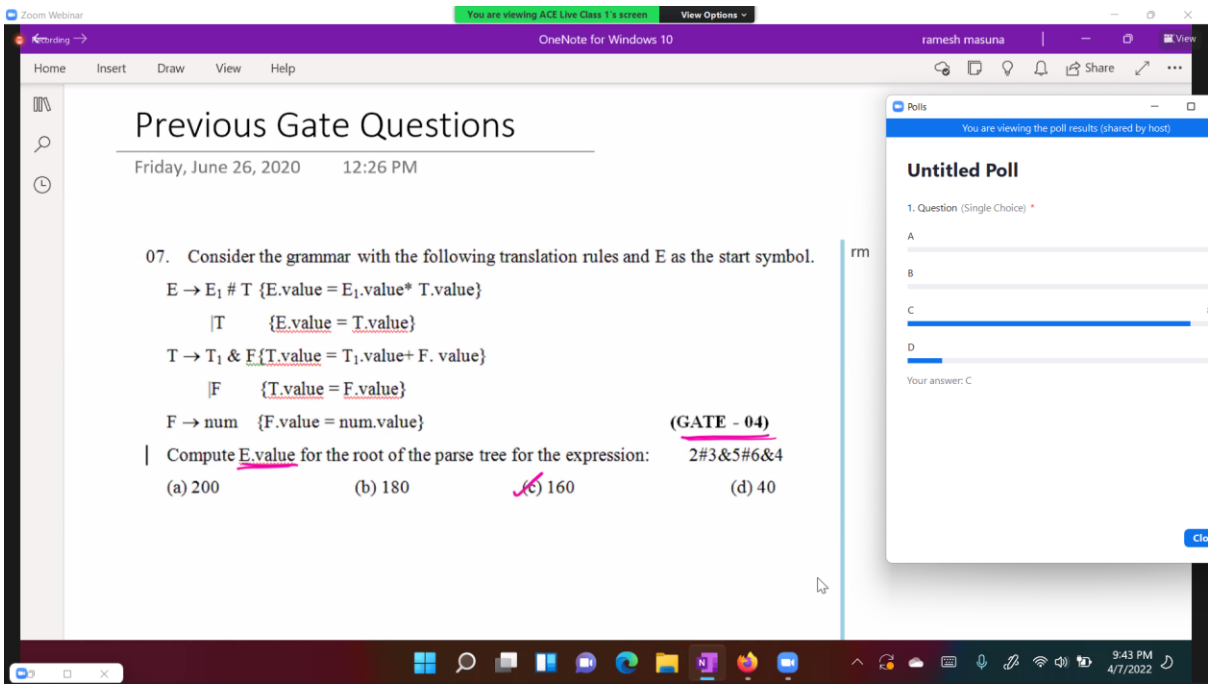
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07. Consider the grammar with the following translation rules and E as the start symbol.
E → E1 # T {E.value = E1.value* T.value}
|T {E.value = T.value}
T → T1 & F{T.value = T1.value+ F. value}
|F {T.value = F.value}
F → num {F.value = num.value} (GATE - 04)
Compute E.value for the root of the parse tree for the expression: 2#3&5#6&4
(a) 200 (b) 180 (c) 160 (d) 40
Polls
You are viewing the poll results (shared by host)
Untitled Poll
1. Question (Single Choice) *
A
B
C
D
Your answer: C
9:43 PM
4/7/2022

03. The following SDT checks

S→ aSb {S. count = S. count + 2}
S→ bSa {S. count = S. count + 2}
S→ ε {S. count = 0}

(a) Equal number of a's and b's.
(b) Number of a's or number of b's in given string
(c) Number of a's and b's in a given string
(d) None

04. Consider the following Syntax Direct Translation scheme

E → E + T { E.value = '+' | | E.value | | T.value}
E → E – T { E.value = '–' | | E.value | | T.value}
E → T { E.value = T.value}
T → id {T.value = id}

S → b {S. val = 2}

If the SDT gives the input string abc, then the output is

(a) 5 (b) 8
(c) 0 (d) 2

07. Consider the following grammar and associated semantic actions.

G →F {G.p = F.p}
F →F1 ∧ F2 { F.p = And(F1.p, F2.p)}
F →F1 ∨ F2 {F.p = Or(F1.p, F2.p)}
F → ¬ F1 { F.p = Neg(F1.p)}
F →F1 ⇒ F2 { F.p = Or(Not(F1.p), F2.p)}
F →(F1) {F.p = F1.p}
F →id { F.p = id.lexeme}

Give the value of the attributes of G after parsing ¬(A ∧(A ⇒B)).

(a) Neg(And(A,Or(Not(B),A))).