Concepts of Context-Free Languages (CFLs) and Context-Free Grammars (CFGs)

39	4.7	Active
Responses	Average Score	Status

1. A Context-Free Language (CFL) is a language that: (1 point)

   83% of respondents (35 of 42) answered this question correctly.

can be represented by a Cont...	35	✓
can only be represented by a ...	7	

2. The language of the strings with sequences of 0's followed by sequences of 1's and with the same number of 0's and 1's is: (1 point)

   78% of respondents (32 of 41) answered this question correctly.

a Context-Free Language (CFL...	9	
a Context-Free Language (CFL...	32	✓

3. Consider the following CFG: A -> AB | B B -> b What is the leftmost derivation for the input string bbb: (1 point)

54% of respondents (21 of 39) answered this question correctly.

A => AB => ABB => BBB => ...	21	✓
A => AB => Ab => ABb => A...	3	
Other	15	

4. A CFG G is said to be ambiguous when: (1 point)

70% of respondents (26 of 37) answered this question correctly.

its CFL, L(G), is ambiguous	5	
there is at least one string in L...	26	✓
there are leftmost and rightm...	6	
there is a doubt about if a stri...	0	

5. Is the following CFG: A -> AB | B B -> b ambiguous? (1 point)

66% of respondents (23 of 35) answered this question correctly.

YES	12	
NO	23	✓

6. Suppose the ambiguous grammar G1: E -> I | E+E | E×E | (E) I -> a | b | Ia | Ib | I0 | I1 and the following non-ambiguous grammar G2: E -> I | E+I | E×I | (E) I -> a | b | Ia | Ib | I0 | I1 Is L(G1) = L(G2)? (1 point)

   44% of respondents (16 of 36) answered this question correctly.

YES	20	
NO	16	✓

7. Suppose the ambiguous grammar G1: E -> I | E+E | E×E | (E) I -> a | b | Ia | Ib | I0 | I1 and the following non-ambiguous grammar G3: E -> J | E×J J -> I | J+I I -> a | b | Ia | Ib | I0 | I1 | (E) Is L(G1) = L(G3)? (1 point)

   49% of respondents (17 of 35) answered this question correctly.

TRUE	17	✓
FALSE	18	

8. Any ambiguous CFG can be modified to a non-ambiguous CFG (representing the same language): (1 point)

   72% of respondents (26 of 36) answered this question correctly.

Only if the language of the a...	26	✓
Always	10