Assignment 12

The due date for submitting this assignment has passed. As per our records you have not submitted this assignment.

Due on 2019-04-24, 23:59 IST.

1) CFLs are closed under (choose the best answer)

(a) union
(b) concatenation
(c) both
(d) none

No, the answer is incorrect.
Score: 0
Accepted Answers: c

2) Are CFLs closed under complementation?

(a) Yes
(b) No

No, the answer is incorrect.
Score: 0
Accepted Answers: b
If for a Turing Machine 0q3111→0xq311 is given and δ(q3, 1) = (q3, y, L) is given then what is the next instantaneous description?

(a) 0q2y11  
(b) 0xyq31  
(c) 0xq3y1  
(d) None of the above

No, the answer is incorrect.  
Score: 0  
Accepted Answers:  
d

4) Which of the following is true? (choose the best option)  

1 point

(a) regular language ⊆ CFL  
(b) CFL ⊆ regular language  
(c) regular language = CFL  
(d) None of the above

No, the answer is incorrect.  
Score: 0  
Accepted Answers:  
a

5) Are CFLs closed under intersection with regular languages?  

1 point

(a) Yes  
(b) No

No, the answer is incorrect.  
Score: 0  
Accepted Answers:  
a

6) A Turing machine is expressed as a 7-tuple 

(Q, Σ, Γ, δ, q0, B, F), then B is the blank symbol such that B ∉ Σ but B ∈ Γ. True or False?

1 point

(a) True  
(b) False

No, the answer is incorrect.  
Score: 0  
Accepted Answers:  
a
No, the answer is incorrect.
Score: 0
Accepted Answers: 

7) Consider the following languages. \( L_1 = \{0^p1^q0^r | p, q, r \geq 0 \} \)
\( L_2 = \{0^p1^q0^r | p, q, r \geq 0, p \neq r \} \)
Which one of the following statements is FALSE?

(a) \( L_2 \) is context-free.
(b) \( L_1 \) intersection \( L_2 \) is context-free.
(c) Complement of \( L_2 \) is recursive
(d) Complement of \( L_1 \) is context-free but not regular

No, the answer is incorrect.
Score: 0
Accepted Answers: 

8) A Turing machine is expressed as a 7-tuple \((Q, \Sigma, \Gamma, \delta, q_0, B, F)\) where \(\Gamma\) is complete set of tape symbols and \(\Sigma\) is finite set of input symbols then what is always true?

(a) \(\Gamma \subseteq \Sigma\)
(b) \(\Sigma \subseteq \Gamma\)
(c) \(\Sigma = \Gamma\)
(d) None of the above

No, the answer is incorrect.
Score: 0
Accepted Answers: 

9) \( L = \{0^n1^a2^n | n \geq 0 \} \) is context-free.

(a) True
(b) False

No, the answer is incorrect.
10. Is \( L = \{ a^m | \text{m is prime} \} \) context free?

(a) Yes
(b) No

No, the answer is incorrect.

Score: 0
Accepted Answers: 

b