Online Assessment (Special Examination) (Even Sem/Part-I/Part-II Examinations 2019 - 2020

Course Name - Formal Language and Automata
Course Code - BCSE404

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Answer all the questions. Each question carry one mark.

9. 1. There are _____ tuples in finite state machine

Mark only one oval.

- 4
- 5
- 6
- Unlimited

10. 2. Transition function maps

Mark only one oval.

- Σ * Q -> Σ
- Q * Q -> Σ
- Σ * Σ -> Q
- Q * Σ -> Q

11. 3.Language of finite automata is

Mark only one oval.

- Type 0
- Type 1
- Type 2
- Type 3

12. 4.Number of final state require to accept Φ in minimal finite automata

Mark only one oval.

- 1
- 2
- 3
- None of these

13. 5. Regular expression for all strings starts with ab and ends with bba is

Mark only one oval.

- aba*b*bba
- ab(ab)*bba
- ab(a+b)*bba
- None of these

14. 6. How many DFA's exits with two states over input alphabet {0,1} ?

Mark only one oval.

- 16
- 26
- 21
- 64

15. 7. Number of states require to simulate a computer with memory capable of storing '3' words each of length '8'

Mark only one oval.

- 3*2^8
- 2^(3*8)
- 2^(3+8)
- None of these

16. 8. A regular language over an alphabet a is one that can be obtained from

Mark only one oval.

- union
- concatenation
- kleene
- All of these

17. 9. Regular expression {0,1} is equivalent to

Mark only one oval.

- 0 U 1
- 0 / 1
- 0 + 1
- All of these

18. 10. Push down automata accepts which language

Mark only one oval.

- Context sensitive language
- Context free language
- Recursive language
- None of these

19. 11. Moore Machine is an application of:

Mark only one oval.

- Finite automata without input
- Finite automata with output
- Non- Finite automata with output
- None of these

20. 12. What is the output for the given language?Language: A set of strings over Σ= {a, b} is taken as input and it prints 1 as an output “for every occurrence of a, b as its substring. (INPUT: abaaab)

Mark only one oval.

- 0010001
- 0101010
- 0111010
- 0010000

21. 13. It is less complex to prove the closure properties over regular languages using

Mark only one oval.

- NFA
- DFA
- PDA
- Can’t be said

22. 14. Which of the following is an application of Finite Automaton?

Mark only one oval.

- Compiler Design
- Grammar Parsers
- Text Search
- All of these

23. 15. To derive a string using the production rules of a given grammar, we use:

Mark only one oval.

- Scanning
- Parsing
- Derivation
- All of these

24. 16.The transition a Push down automaton makes is additionally dependent upon the:

Mark only one oval.

- stack
- input tape
- terminals
- None of these

25. 17. A PDA machine configuration (p, w, y) can be correctly represented as

Mark only one oval.

- current state, unprocessed input, stack content)
- (unprocessed input, stack content, current state)
- (current state, stack content, unprocessed input)
- None of these

26. 18. If the PDA does not stop on an accepting state and the stack is not empty, the string is:

Mark only one oval.

- rejected
- goes into loop forever
- both rejected & goes into loop forever
- None of these

27. 19. A language accepted by Deterministic Push down automata is closed under which of the following?

Mark only one oval.

- Complement
- Union
- both Complement and Union
- None of these

28. 20. The format: A->aB refers to which of the following?

Mark only one oval.

- Chomsky Normal Form
- Greibach Normal Form
- Backus Naur Form
- None of these

29. 21. Which of the following does not have left recursions?

Mark only one oval.

- Chomsky Normal Form
- Greibach Normal Form
- Backus Naur Form
- All of these

30. 22. Every grammar in Chomsky Normal Form is:

Mark only one oval.

- regular
- context sensitive
- context free
- All of these

31. 23. In which of the following, does the CNF conversion find its use?

Mark only one oval.

- CYK Algorithm
- Bottom up parsing
- Preprocessing step in some algorithms
- All of these

32. 24.Which of the following do we use to form an NFA from a regular expression?

Mark only one oval.

- Subset Construction Method
- Power Set Construction Method
- Thompson Construction Method
- Scott Construction Method

33. 25. Which among the following can be an example of application of finite state machine(FSM)?

Mark only one oval.

- Communication Link
- Adder
- Stack
- None of these

34. 26. Predict the number of transitions required to automate the following language using only 3 states:L= {w | w ends with 00}

Mark only one oval.

- 3
- 2
- 4
- cannot be said

35. 27. The total number of states to build the given language using DFA:L= {w | w has exactly 2 a's and at least 2 b's}

Mark only one oval.

- 10
- 11
- 12
- 13

36. 28. L1= {w | w does not contain the string tr }L2= {w | w does contain the string tr}Given ∑= {t, r}, The difference of the minimum number of states required to form L1 and L2?

Mark only one oval.

- 0
- 1
- 2
- cannot be said

37. 29. The output alphabet can be represented as:

Mark only one oval.

- δ
- Δ
- Σ
- None of these

38. 30. In mealy machine, the O/P depends upon?

Mark only one oval.

- State
- Previous State
- State and Input
- Only Input