1. There are \_\_\_\_\_\_\_\_ tuples in finite state machine.

a) 4

b) 5

c) 6

d) unlimited

2. Transition function maps.

a) S \* Q -> S

b) Q \* Q -> S

c) S \* S -> Q

d) Q \* S -> Q

3. Number of states require to accept string ends with 10.

a) 3

b) 2

c) 1

d) can’t be represented.

4. Extended transition function is .

a) Q \* S\* -> Q

b) Q \* S -> Q

c) Q\* \* S\* -> S

d) Q \* S -> S

5. d\*(q,ya) is equivalent to .

a) d((q,y),a)

b) d(d\*(q,y),a)

c) d(q,ya)

d) independent from d notation

6. String X is accepted by finite automata if .

a) d\*(q,x) E A

b) d(q,x) E A

c) d\*(Q0,x) E A

d) d(Q0,x) E A

7. Languages of a automata is

a) If it is accepted by automata

b) If it halts

c) If automata touch final state in its life time

d) All language are language of automata

8. Language of finite automata is.

a) Type 0

b) Type 1

c) Type 2

d) Type 3

9. Finite automata requires minimum \_\_\_\_\_\_\_ number of stacks.

a) 1

b) 0

c) 2

d) None of the mentioned

10. Number of final state require to accept F in minimal finite automata.

a) 1

b) 2

c) 3

d) None of the mentioned

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

a) aba\*b\*bba

b) ab(ab)\*bba

c) ab(a+b)\*bba

d) All of the mentioned

12. How many DFA’s exits with two states over input alphabet {0,1} ?

a) 16

b) 26

c) 32

d) 64

13. The basic limitation of finite automata is that

a) It can’t remember arbitrary large amount of information.

b) It sometimes recognize grammar that are not regular.

c) It sometimes fails to recognize regular grammar.

d) All of the mentioned

View Answer

14. Number of states require to simulate a computer with memory capable of storing ‘3’ words each of length ‘8’.

a) 3 \* 28

b) 2(3\*8)

c) 2(3+8)

d) None of the mentioned

15. FSM with output capability can be used to add two given integer in binary representation. This is

a) True

b) False

c) May be true

d) None of the mentioned

16. Which of the following not an example Bounded Information?

a) fan switch outputs {on, off}

b) electricity meter reading

c) colour of the traffic light at the moment

d) none of the mentioned

17. A Language for which no DFA exist is a\_\_\_\_\_\_\_\_

a) Regular Language

b) Non-Regular Language

c) May be Regular

d) Cannot be said

17. A DFA cannot be represented in the following format

a) Transition graph

b) Transition Table

c) C code

d) None of the mentioned

18. When are 2 finite states equivalent?

a) Same number of transitions

b) Same number of states

c) Same number of states as well as transitions

d) Both are final states

19. Can a DFA recognize a palindrome number?

a) Yes

b) No

c) Yes, with input alphabet as ?\*

d) Can’t be determined

20. Which of the following is not an example of finite state machine system?

a) Control Mechanism of an elevator

b) Combinational Locks

c) Traffic Lights

d) Digital Watches

21. The password to the admins account=”administrator”. The total number of states required to make a password-pass system using DFA would be \_\_\_\_\_\_\_\_\_\_

a) 14 states

b) 13 states

c) 12 states

d) A password pass system cannot be created using DFA

22. Let ?= {a, b, …. z} and A = {Hello, World}, B= {Input, Output}, then (A\*nB) U (B\*nA) can be represented as:

a) {Hello, World, Input, Output, e}

b) {Hello, World, e}

c) {Input, Output, e}

d) {}

23. For a machine to surpass all the letters of alphabet excluding vowels, how many number of states in DFA would be required?

a) 3

b) 2

c) 22

d) 27

24. For a machine to surpass all the letters of alphabet excluding vowels, how many number of states in DFA would be required?

a) 3

b) 2

c) 22

d) 27

25.8. Given:

L= {x??= {0,1} |x=0n1n for n>=1}; Can there be a DFA possible for the language?

a) Yes

b) No

26. d(A,1) = B, d(A,0) =A

? (B, (0,1)) =C

d(C,0) = A (Initial state =A)

String=”011001” is transit at which of the states?

a) A

b) C

c) B

d) Invalid String

27.Predict the following step in the given bunch of steps which accepts a strings which is of even length and has a prefix=’01’

d (q0, e) =q0 < d(q0,0) =d (d (q0, e),0) =d(q0,0) =q1 < \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

a) d (q0, 011) =d (d (q0,1), 1) =d (q2, 1) =q3

b) d (q0, 01) =d (d (q0, 0), 1) = d (q1, 1) =q2

c) d (q0, 011) =d (d (q01, 1), 1) =d (q2, 0) =q3

d) d (q0, 0111) =d (d (q0, 011), 0) = d (q3, 1) =q2

28.The complement of a language will only be defined when and only when the \_\_\_\_\_\_\_\_\_\_ over the language is defined.

a) String

b) Word

c) Alphabet

d) Grammar

29.Which among the following is not notated as infinite language?

a) Palindrome

b) Reverse

c) Factorial

d) L={ab}\*

30. How many languages are over the alphabet R?

a) countably infinite

b) countably finite

c) uncountable finite

d) uncountable infinite

31. According to the 5-tuple representation i.e. FA= {Q, ?, d, q, F}

Statement 1: q ? Q’; Statement 2: F?Q

a) Statement 1 is true, Statement 2 is false

b) Statement 1 is false, Statement 2 is true

c) Statement 1 is false, Statement 2 may be true

d) Statement 1 may be true, Statement 2 is false

32. dˆ tells us the best:

a) how the DFA S behaves on a word u

b) the state is the dumping state

c) the final state has been reached

d) Kleene operation is performed on the set

32. Which of the following option is correct?

A= {{abc, aaba}. {e, a, bb}}

a) abcbb ? A

b) e?A

c) e may not belong to A

d) abca ? A

33. For a DFA accepting binary numbers whose decimal equivalent is divisible by 4, what are all the possible remainders?

a) 0

b) 0,2

c) 0,2,4

d) 0,1,2,3

34. Given:

L1= {x? ?\*|x contains even no’s of 0’s}

L2= {x? ?\*|x contains odd no’s of 1’s}

No of final states in Language L1 U L2?

a) 1

b) 2

c) 3

d) 4

35. The maximum number of transition which can be performed over a state in a DFA?

?= {a, b, c}

a) 1

b) 2

c) 3

d) 4

36. The maximum sum of in degree and out degree over a state in a DFA can be determined as:

?= {a, b, c, d}

a) 4+4

b) 4+16

c) 4+0

d) depends on the Language

37. The sum of minimum and maximum number of final states for a DFA n states is equal to:

a) n+1

b) n

c) n-1

d) n+2

38. Which of the following options is correct?

Statement 1: Initial State of NFA is Initial State of DFA.

Statement 2: The final state of DFA will be every combination of final state of NFA.

a) Statement 1 is true and Statement 2 is true

b) Statement 1 is true and Statement 2 is false

c) Statement 1 can be true and Statement 2 is true

d) Statement 1 is false and Statement 2 is also false

39. Given Language: L= {ab U aba}\*

If X is the minimum number of states for a DFA and Y is the number of states to construct the NFA,

|X-Y|=?

a) 2

b) 3

c) 4

d) 1

40. An automaton that presents output based on previous state or current input:

a) Acceptor

b) Classifier

c) Transducer

d) None of the mentioned.

41. If NFA of 6 states excluding the initial state is converted into DFA, maximum possible number of states for the DFA is ?

a) 64

b) 32

c) 128

d) 127

42. NFA, in its name has ’non-deterministic’ because of :

a) The result is undetermined

b) The choice of path is non-deterministic

c) The state to be transited next is non-deterministic

d) All of the mentioned

43. Which of the following is correct proposition?

Statement 1: Non determinism is a generalization of Determinism.

Statement 2: Every DFA is automatically an NFA

a) Statement 1 is correct because Statement 2 is correct

b) Statement 2 is correct because Statement 2 is correct

c) Statement 2 is false and Statement 1 is false

d) Statement 1 is false because Statement 2 is false

44. Given Language L= {x? {a, b}\*|x contains aba as its substring}

Find the difference of transitions made in constructing a DFA and an equivalent NFA?

a) 2

b) 3

c) 4

d) Cannot be determined.

45. The construction time for DFA from an equivalent NFA (m number of node)is:

a) O(m2)

b) O(2m)

c) O(m)

d) O(log m)

46. If n is the length of Input string and m is the number of nodes, the running time of DFA is x that of NFA.Find x?

a) 1/m2

b) 2m

c) 1/m

d) log m

46. The number of tuples in an extended Non Deterministic Finite Automaton:

a) 5

b) 6

c) 7

d) 4

47. What is wrong in the given definition?

Def: ({q0, q1, q2}, {0,1}, d, q3, {q3})

a) The definition does not satisfy 5 Tuple definition of NFA

b) There are no transition definition

c) Initial and Final states do not belong to the Graph

d) Initial and final states can’t be same

48. If d is the transition function for a given NFA, then we define the d’ for the DFA accepting the same language would be:

Note: S is a subset of Q and a is a symbol.

a) d’ (S, a) =Up?s d (p, a)

b) d’ (S, a) =Up?s d (p, a)

c) d’ (S, a) =Up?s d(p)

d) d’ (S) =Up?s d(p)

49. What is the relation between DFA and NFA on the basis of computational power?

a) DFA > NFA

b) NFA > DFA

c) Equal

d) Can’t be said

50. If a string S is accepted by a finite state automaton, S=s1s2s3……sn where si?? and there exists a sequence of states r0, r1, r2…… rn such that d(r(i), si+1) =ri+1 for each 0, 1, …n-1, then r(n) is:

a) initial state

b) transition symbol

c) accepting state

d) intermediate state

51. Subset Construction method refers to:

a) Conversion of NFA to DFA

b) DFA minimization

c) Eliminating Null references

d) e-NFA to NFA

52. Given Language:

Ln= {x? {0,1} \* | |x|=n, nth symbol from the right in x is 1}

How many state are required to execute L3 using NFA?

a) 16

b) 15

c) 8

d) 7

53. If L is a regular language, Lc and Lr both will be:

a) Accepted by NFA

b) Rejected by NFA

c) One of them will be accepted

d) Cannot be said

54. In NFA, this very state is like dead-end non final state:

a) ACCEPT

b) REJECT

c) DISTINCT

d) START

55. We can represent one language in more one FSMs, true or false?

a) TRUE

b) FALSE

c) May be true

d) Cannot be said

56.. The production of form non-terminal -> e is called:

a) Sigma Production

b) Null Production

c) Epsilon Production

d) All of the mentioned

57. Which of the following is a regular language?

a) String whose length is a sequence of prime numbers

b) String with substring wwr in between

c) Palindrome string

d) String with even number of Zero’s

58. Which of the following recognizes the same formal language as of DFA and NFA?

a) Power set Construction

b) Subset Construction

c) Robin-Scott Construction

59. Under which of the following operation, NFA is not closed?

a) Negation

b) Kleene

c) Concatenation

d) None of the mentioned

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

a) NFA

b) DFA

c) PDA

d) Can’t be said

61. Which of the following is an application of Finite Automaton?

a) Compiler Design

b) Grammar Parsers

c) Text Search

d) All of the mentioned

62. John is asked to make an automaton which accepts a given string for all the occurrence of ‘1001’ in it. How many number of transitions would John use such that, the string processing application works?

a) 9

b) 11

c) 12

d) 15

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

a) Subset Construction Method

b) Power Set Construction Method

c) Thompson Construction Method

d) Scott Construction Method

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

a) Communication Link

b) Adder

c) Stack

d) None of the mentioned

65. Which among the following is not an application of FSM?

a) Lexical Analyser

b) BOT

c) State charts

d) None of the mentioned

d) All of the mentioned

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c) 12

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b) Adder

c) Stack

d) none

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a) Lexical Analyser

b) BOT

c) State charts

d) None of the mentioned

73. Given Language: {x | it is divisible by 3}

The total number of final states to be assumed in order to pass the number constituting {0, 1} is

a) 0

b) 1

c) 2

d) 3

74. A binary string is divisible by 4 if and only if it ends with:

a) 100

b) 1000

c) 1100

d) 0011

75. Let L be a language whose FA consist of 5 acceptance states and 11 non final states. It further consists of a dumping state. Predict the number of acceptance states in Lc.

a) 16

b) 11

c) 5

d) 6

76. If L1 and L2 are regular languages, which among the following is an exception?

a) L1 U L2

b) L1 – L2

c) L1 n L2

d) All of the mentioned

77. Predict the analogous operation for the given language:

A: {[p, q] | p ? A1, q does not belong to A2}

a) A1-A2

b) A2-A1

c) A1.A2

d) A1+A2

78. Statement 1: NFA computes the string along parallel paths.

Statement 2: An input can be accepted at more than one place in an NFA.

Which among the following options are most appropriate?

a) Statement 1 is true while 2 is not

b) Statement 1 is false while is not

c) Statement 1 and 2, both are true

d) Statement 1 and 2, both are false

79. Which of the following options is correct for the given statement?

Statement: If K is the number of states in NFA, the DFA simulating the same language would have states less than 2k.

a) True

b False

80. Let N (Q, ?, d, q0, A) be the NFA recognizing a language L. Then for a DFA (Q’, ?, d’, q0’, A’), which among the following is true?

a) Q’ = P(Q)

b) ?’ = d’ (R, a) = {q ? Q | q ? d (r, a), for some r ? R}

c) Q’={q0}

d) All of the mentioned

81. There exists an initial state, 17 transition states, 7 final states and one dumping state, Predict the maximum number of states in its equivalent DFA?

a) 226

b) 224

c) 225

d) 223

82. Under which of the following operation, NFA is not closed?

a) Negation

b) Kleene

c) Concatenation

d) None of the mentioned

83. It is less complex to prove the closure properties over regular languages using:

a) NFA

b) DFA

c) PDA

d) Can’t be said

84. Which of the following is an application of Finite Automaton?

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b) 11

c) 12

d) 15

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c) Thompson Construction Method

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b) Adder

c) Stack

d) None of the mentioned

88. Which among the following is not an application of FSM?

a) Lexical Analyser

b) BOT

c) State charts

d) None of the mentioned

89. 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?

a) 0

b) 1

c) 2

d) Cannot be said

90. Predict the number of transitions required to automate the following language using only 3 states:

L= {w | w ends with 00}

a) 3

b) 2

c) 4

d) Cannot be said

91. 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}

a) 10

b) 11

c) 12

d) 13

92. According to the given transitions, which among the following are the epsilon closures of q1 for the given NFA?

? (q1, e) = {q2, q3, q4}

? (q4, 1) =q1

? (q1, e) =q1

a) q4

b) q2

c) q1

d) q1, q2, q3, q4

93. State true or false?

Statement: An NFA can be modified to allow transition without input alphabets, along with one or more transitions on input symbols.

a) True

b) False

94. State true or false?

Statement: e (Input) does not appears on Input tape.

a) True

b) False

95. Statement 1: e- transition can be called as hidden non-determinism.

Statement 2: d (q, e) = p means from q it can jump to p with a shift in read head.

Which among the following options is correct?

a) Statement 1 and 2, both are correct

b) Statement 1 and 2, both are wrong

c) Statement 1 is correct while Statement 2 is wrong

d) Statement 1 is wrong while Statement 2 is correct

96. e- closure of q1 in the given transition graph:

a) {q1}

b) {q0, q2}

c) {q1, q2}

d) {q0, q1, q2}

97. Predict the total number of final states after removing the e-moves from the given NFA?

a) 1

b) 2

c) 3

d) 0

98. For NFA with e-moves, which among the following is correct?

a) ?: Q X (? U {e}) -> P(Q)

b) ?: Q X (?) -> P(Q)

c) ?: Q X (?\*) -> P(Q)

d) All of the mentioned

99. Which among the following is false?

e-closure of a subset S of Q is:

a) Every element of S ? Q

b) For any q ? e(S), every element of d (q, e) is in e(S)

c) No other element is in e(S)

d) None of the mentioned

100. The automaton which allows transformation to a new state without consuming any input symbols:

a) NFA

b) DFA

c) NFA-l

d) All of the mentione

101. e-transitions are

a) conditional

b) unconditional

c) input dependent

d) none of the mentioned

102. Regular sets are closed under union, concatenation and kleene closure.

a) True

b) False

c) Depends on regular set

d) Can’t say

103. Complement of a DFA can be obtained by

a) making starting state as final state.

b) no trival method.

c) making final states non-final and non-final to final.

d) make final as a starting state.

104. Complement of regular sets are \_\_\_\_\_\_\_\_\_

a) Regular

b) CFG

c) CSG

d) RE

105. If L1 and L2 are regular sets then intersection of these two will be

a) Regular

b) Non Regular

c) Recursive

d) Non Recursive

106. If L1 is regular L2 is unknown but L1-L2 is regular ,then L2 must be

a) Empty set

b) CFG

c) Decidable

d) Regular

107. Reverse of a DFA can be formed by

a) using PDA

b) making final state as non-final

c) making final as starting state and starting state as final state

d) None of the mentioned

108. Reverse of (0+1)\* will be

a) Phi

b) Null

c) (0+1)\*

d) (0+1)

109. A \_\_\_\_\_\_\_\_\_\_\_ is a substitution such that h(a) contains a string for each a.

a) Closure

b) Interchange

c) Homomorphism

d) Inverse Homomorphism

110. Homomorphism of a regular set is \_\_\_\_\_\_\_

a) Universal set

b) Null set

c) Regular set

d) Non regular set

111. (a ^ 5b ^ 5)\* is example of \_\_\_\_\_\_\_\_

a) Type 0 language

b) Type 1 language

c) Type 2 language

d) Type 3 language

112. Which of the following is type 3 language ?

a) Strings of 0’s whose length is perfect square

b) Palindromes string

c) Strings of 0’s having length prime number

d) String of odd number of 0’s

113. a ^ nb ^ n where (n+m) is even .

a) Type 0

b) Type 1

c) Type 2

d) Type 3

114. L is a regular Language if and only If the set of \_\_\_\_\_\_\_\_\_\_ classes of IL is finite.

a) Equivalence

b) Reflexive

c) Myhill

d) Nerode

115. A language can be generated from simple primitive language in a simple way if and only if

a) It is recognized by a device of infinite states

b) It takes no auxiliary memory

c) Both are correct

d) Both are wrong

116. Which of the following does not represents the given language?

Language: {0,01}

a) 0+01

b) {0} U {01}

c) {0} U {0}{1}

d) {0} ^ {01}

117. According to the given language, which among the following expressions does it corresponds to?

Language L={x?{0,1}|x is of length 4 or less}

a) (0+1+0+1+0+1+0+1)4

b) (0+1)4

c) (01)4

d) (0+1+e)4

118. Which among the following looks similar to the given expression?

((0+1). (0+1)) \*

a) {x? {0,1} \*|x is all binary number with even length}

b) {x? {0,1} |x is all binary number with even length}

c) {x? {0,1} \*|x is all binary number with odd length}

d) {x? {0,1} |x is all binary number with odd length}

119. Concatenation Operation refers to which of the following set operations:

a) Union

b) Dot

c) Kleene

d) Two of the options are correct

120. Concatenation of R with ? outputs:

a) R

b) ?

c) R.?

d) None of the mentioned

121. A finite automaton accepts which type of language:

a) Type 0

b) Type 1

c) Type 2

d) Type 3

122. Which among the following are incorrect regular identities?

a) eR=R

b) e\*=e

c) ?\*=e

d) R?=R

123. Simplify the following regular expression:

e+1\*(011) \*(1\*(011) \*) \*

a) (1+011) \*

b) (1\*(011) \*)

c) (1+(011) \*) \*

d) (1011) \*

124. P, O, R be regular expression over ?, P is not e, then

R=Q + RP has a unique solution:

a) Q\*P

b) QP\*

c) Q\*P\*

d) (P\*O\*) \*

125. Arden’s theorem is true for:

a) More than one initial states

b) Null transitions

c) Non-null transitions

d) None of the mentioned

126. The difference between number of states with regular expression (a + b) and (a + b) \* is:

a) 1

b) 2

c) 3

d) 0

127. In order to represent a regular expression, the first step to create the transition diagram is:

a) Create the NFA using Null moves

b) Null moves are not acceptable, thus should not be used

c) Predict the number of states to be used in order to construct the Regular expression

d) None of the mentioned

128. (0+e) (1+e) represents

a) {0, 1, 01, e}

b) {0, 1, e}

c) {0, 1, 01 ,11, 00, 10, e}

d) {0, 1}

129. The minimum number of states required to automate the following Regular Expression:

(1) \*(01+10) (1) \*

a) 4

b) 3

c) 2

d) 5

130. Which of the following statements is not true?

a) Every language defined by any of the automata is also defined by a regular expression

b) Every language defined by a regular expression can be represented using a DFA

c) Every language defined by a regular expression can be represented using NFA with e moves

d) Regular expression is just another representation for any automata definition

131. The total number of states required to automate the given regular expression

(00)\*(11)\*

a) 3

b) 4

c) 5

d) 6

134. Generate a regular expression for the following problem statement:

Password Validation: String should be 8-15 characters long. String must contain a number, an Uppercase letter and a Lower case letter.

a) ^(?=.\*[a-z])(?=.\*[A-Z])(?=.\*\d).{8,15}$

b) ^(?=.\*[a-z])(?=.\*[A-Z])(?=.\*\d).{9,16}$

c) ^(?=.[a-z])(?=.[A-Z])(?=.\d).{8,15}$

d) None of the mentioned

135. Generate a regular expression for the following problem statement:

P(x): String of length 6 or less for å={0,1}\*

a) (1+0+e)6

b) (10)6

c) (1+0)(1+0)(1+0)(1+0)(1+0)(1+0)

d) More than one of the mentioned is correct

136. The minimum number of states required in a DFA (along with a dumping state) to check whether the 3rd bit is 1 or not for |n|>=3

a) 3

b) 4

c) 5

d) 1

137. Which of the regular expressions corresponds to the given problem statement:

P(x): Express the identifiers in C Programming language

l=letters

d=digits

a) (l+\_)(d+\_)\*

b) (l+d+\_)\*

c) (l+\_)(l+d+\_)\*

d) (\_+d)(l+d+\_)\*

138. Generate a regular expression for the given language:l

L(x): {xÎ{0,1}\*| x ends with 1 nd does not contain a substring 01}

a) (0+01)\*

b) (0+01)\*1

c) (0+01)\*(1+01)

d) All of the mentioned

139. The minimum number of transitions to pass to reach the final state as per the following regular expression is:

{a,b}\*{baaa}

a) 4

b) 5

c) 6

d) 3

140. Which of the regular expressions corresponds to the given problem statement:

P(x): Express the identifiers in C Programming language

l=letters

d=digits

a) (l+\_)(d+\_)\*

b) (l+d+\_)\*

c) (l+\_)(l+d+\_)\*

d) (\_+d)(l+d+\_)\*

141. Generate a regular expression for the given language:l

L(x): {xÎ{0,1}\*| x ends with 1 nd does not contain a substring 01}

a) (0+01)\*

b) (0+01)\*1

c) (0+01)\*(1+01)

d) All of the mentioned

142. The minimum number of transitions to pass to reach the final state as per the following regular expression is:

{a,b}\*{baaa}

a) 4

b) 5

c) 6

d) 3

143. If L1, L2 are regular and op(L1, L2) is also regular, then L1 and L2 are said to be \_\_\_\_\_\_\_\_\_\_\_\_ under an operation op.

a) open

b) closed

c) decidable

d) none of the mentioned

144. Suppose a regular language L is closed under the operation halving, then the result would be:

a) 1/4 L will be regular

b) 1/2 L will be regular

c) 1/8 L will be regular

d) Al of the mentioned

145. If L1' and L2' are regular languages, then L1.L2 will be

a) regular

b) non regular

c) may be regular

d) none of the mentioned

146. If L1 and L2' are regular languages, L1 n (L2' U L1')’ will be

a) regular

b) non regular

c) may be regular

d) none of the mentioned

147. If A and B are regular languages, !(A’ U B’) is:

a) regular

b) non regular

c) may be regular

d) none of the mentioned

148. Which among the following are the boolean operations that under which regular languages are closed?

a) Union

b) Intersection

c) Complement

d) All of the mentioned

149. Suppose a language L1 has 2 states and L2 has 2 states. After using the cross product construction method, we have a machine M that accepts L1 n L2. The total number of states in M:

a) 6

b) 4

c) 2

d) 8

150. If L is a regular language, then (L’)’ U L will be :

a) L

b) L’

c) f

d) none of the mentioned

151. If L is a regular language, then (((L’)r)’)\* is:

a) regular

b) non regular

c) may be regular

d) none of the mentioned

152. Which among the following is the closure property of a regular language?

a) Emptiness

b) Universality

c) Membership

d) None of the mentioned

153. The entity which generate Language is termed as:

a) Automata

b) Tokens

c) Grammar

d) Data

154. Production Rule: aAb->agb belongs to which of the following category?

a) Regular Language

b) Context free Language

c) Context Sensitive Language

d) Recursively Ennumerable Language

155. Which of the following statement is false?

a) Context free language is the subset of context sensitive language

b) Regular language is the subset of context sensitive language

c) Recursively ennumerable language is the super set of regular language

d) Context sensitive language is a subset of context free language

156. The Grammar can be defined as: G=(V, ?, p, S)

In the given definition, what does S represents?

a) Accepting State

b) Starting Variable

c) Sensitive Grammar

d) None of these

157. Which among the following cannot be accepted by a regular grammar?

a) L is a set of numbers divisible by 2

b) L is a set of binary complement

c) L is a set of string with odd number of 0

d) L is a set of 0n1n

158. Which of the expression is appropriate?

For production p: a->b where a?V and b?\_\_\_\_\_\_\_

a) V

b) S

c) (V+?)\*

d) V+ ?

159. For S->0S1|e for ?={0,1}\*, which of the following is wrong for the language produced?

a) Non regular language

b) 0n1n | n>=0

c) 0n1n | n>=1

d) None of the mentioned

160. Which of the following is not a notion of Context free grammars?

a) Recursive Inference

b) Derivations

c) Sentential forms

d) All of the mentioned

161. State true or false:

Statement: The recursive inference procedure determines that string w is in the language of the variable A, A being the starting variable.

a) true

b) false

162. Which of the following is/are the suitable approaches for inferencing?

a) Recursive Inference

b) Derivations

c) Both Recursive Inference and Derivations

d) None of the mentioned

163. If w belongs to L(G), for some CFG, then w has a parse tree, which defines the syntactic structure of w. w could be:

a) program

b) SQL-query

c) XML document

d) All of the mentioned

164. Is the following statement correct?

Statement: Recursive inference and derivation are equivalent.

a) Yes

b) No

165. A->aA| a| b

The number of steps to form aab:

a) 2

b) 3

c) 4

d) 5

166. An expression is mentioned as follows. Figure out number of incorrect notations or symbols, such that a change in those could make the expression correct.

L(G)={w in T\*|S?\*w}

a) 0 Errors

b) 1 Error

c) 2 Error

d) Invalid Expression

167. The language accepted by Push down Automaton:

a) Recursive Language

b) Context free language

c) Linearly Bounded language

d) All of the mentioned

168. Which among the following is the correct option for the given grammar?

G->X111|G1,X->X0|00

a) {0a1b|a=2,b=3}

b) {0a1b|a=1,b=5}

c) {0a1b|a=b}

d) More than one of the mentioned is correct

169. Which of the following the given language belongs to?

L={ambmcm| m>=1}

a) Context free language

b) Regular language

c) Both (a) and (b)

d) None of the mentioned

170. Choose the correct option:

Statement: There exists two inference approaches:

a) Recursive Inference

b) Derivation

171. Which of the following are always unambiguous?

a) Deterministic Context free grammars

b) Non-Deterministic Regular grammars

c) Context sensitive grammar

d) None of the mentioned

172. A CFG is not closed under

a) Dot operation

b) Union Operation

c) Concatenation

d) Iteration

173. Which of the following is an real-world programming language ambiguity?

a) dangling else problem

b) halting problem

c) maze problem

d) none of the mentioned

174. Which of the following is a parser for an ambiguous grammar?

a) GLR parser

b) Chart parser

c) All of the mentioned

d) None of the mentioned

175. A language that admits only ambiguous grammar:

a) Inherent Ambiguous language

b) Inherent Unambiguous language

c) Context free language

d) Context Sensitive language

176. Which of the following is an example of inherent ambiguous language?

a) {an|n>1}

b) {anbncmdm| n,m > 0}

c) {0n1n|n>0}

d) None of the mentioned

177. A push down automaton employs \_\_\_\_\_\_\_\_ data structure.

a) Queue

b) Linked List

c) Hash Table

d) Stack

178. State true or false:

Statement: The operations of PDA never work on elements, other than the top.

a) true

b) false

179. Which of the following allows stacked values to be sub-stacks rather than just finite symbols?

a) Push Down Automaton

b) Turing Machine

c) Nested Stack Automaton

d) None of the mentioned

179. A non deterministic two way, nested stack automaton has n-tuple definition. State the value of n.

a) 5

b) 8

c) 4

d) 10

180. Push down automata accepts \_\_\_\_\_\_\_\_\_ languages.

a) Type 3

b) Type 2

c) Type 1

d) Type 0

181. The class of languages not accepted by non deterministic, nonerasing stack automata is \_\_\_\_\_\_\_

a) NSPACE(n2)

b) NL

c) CSL

d) All of the mentioned

182. A push down automaton with only symbol allowed on the stack along with fixed symbol.

a) Embedded PDA

b) Nested Stack automata

c) DPDA

d) Counter Automaton