



Dr.G.R.Damodaran College of Science

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CRISL rated 'A' (TN) for MBA and MIB Programmes

I BSc(Computer Science)[2017-2020]

Semester - II

Allied:DISCRETE MATHEMATICS - 207D

Multiple Choice Questions.

1. If there are n distinct components in a statement then there are _____ combinations of values in the truth table.

- A. 2^n
- B. $n+1$
- C. n
- D. $n+2$

ANSWER: A

2. If P then Q is called _____ statement

- A. Conjunction
- B. disjunction
- C. conditional
- D. bi conditional

ANSWER: C

3. $(P \rightarrow Q) \rightarrow (\wedge Q)$ is _____.

- A. not a well formed formula
- B. tautology
- C. contradiction
- D. well formed formula

ANSWER: A

4. A relation R in a set X is symmetric if _____.

- A. $xRy, yRz \Rightarrow xRz$.
- B. xRy
- C. $xRy \Rightarrow yRx$
- D. xRx

ANSWER: C

5. If a relation is reflexive, then all the diagonal entries in the relation matrix must be _____.

- A. 0
- B. 1
- C. 2
- D. -1

ANSWER: B

6. If R is reflexive, symmetric and transitive then the relation is said to be _____.

- A. Binary relation
- B. Compatibility relation
- C. Equivalence relation
- D. Partial order relation

ANSWER: C

7. $S \rightarrow aAB$, $AB \rightarrow bB$, $B \rightarrow b$, $A \rightarrow aB$ satisfies _____ type of grammar

- A. 0
- B. 1
- C. 0,1
- D. 2

ANSWER: C

8. If there are more than 2 LMD for a string then it is said to be _____.

- A. Ambigious
- B. unambigious
- C. language
- D. finite state automata

ANSWER: A

9. A finite non-empty set of symbols is called _____.

- A. alphabet
- B. letter
- C. string
- D. language

ANSWER: A

10. The specification of proper construction of a sentence is called _____.

- A. alphabet
- B. letter
- C. syntax
- D. word

ANSWER: C

11. Context free grammar is also known as _____ grammar.

- A. type 0
- B. type 1
- C. type 2
- D. type 3

ANSWER: C

12. A class of machine which accepts a _____ language is called finite state automata.

- A. type 0
- B. type 1
- C. type 2

D. type 3

ANSWER: D

13. Accepting states are denoted by _____.

- A. circle
- B. an arrow mark
- C. double circle
- D. straight line

ANSWER: C

14. For converting NFA to DFA we should _____ all the states which have no incoming.

- A. add
- B. subtract
- C. multiply
- D. delete

ANSWER: D

15. The set of all finite words over E is denoted by _____.

- A. E^+
- B. E^*
- C. E
- D. E^-

ANSWER: A

16. Surjective function is also called _____.

- A. onto
- B. into
- C. one to one
- D. one one onto

ANSWER: A

17. One to one onto function is also called _____.

- A. bijective
- B. injective
- C. surjective
- D. composite function

ANSWER: A

18. The composition of function is associative but not _____.

- A. commutative
- B. associative
- C. distributive
- D. idempotent

ANSWER: A

19. A mapping x into itself is called _____.

- A. reflexive
- B. symmetric

- C. transitive
- D. equivalence

ANSWER: A

20. The duality law of $(P \wedge Q) \vee T$ is _____.

- A. $(P \wedge Q) \wedge T$
- B. $(P \vee Q) \wedge T$
- C. $(P \vee Q) \vee F$
- D. $(P \vee Q) \wedge F$

ANSWER: D

21. A sum of the variables and their negations in a formula is called _____.

- A. elementary sum
- B. elementary product
- C. cnf
- D. dnf

ANSWER: A

22. A premise may be introduced at any point in the derivation is called _____.

- A. Rule P
- B. Rule P and Rule T
- C. Rule T
- D. Rule CP

ANSWER: A

23. A product of the variables and their negations in a formula is called _____.

- A. elementary product
- B. elementary sum
- C. cnf
- D. dnf

ANSWER: A

24. Min-terms of two statements are formed by introducing the connective _____.

- A. Conjunction
- B. disjunction
- C. Conditional
- D. negation

ANSWER: A

25. Any vertex having degree one is called _____.

- A. Simple vertex
- B. pendent vertex
- C. regular vertex
- D. complete vertex

ANSWER: B

26. A graph that has neither self loops nor parallel edges is called _____ graph.

- A. regular

- B. simple
- C. complete
- D. null

ANSWER: B

27. A graph in which every vertex has same degree is called _____graph.

- A. regular
- B. simple
- C. complete
- D. null

ANSWER: A

28. Kn denotes _____graph.

- A. regular
- B. simple
- C. complete
- D. null

ANSWER: C

29. The number of vertices of odd degree in a graph is always_____.

- A. odd
- B. even
- C. zero
- D. one

ANSWER: B

30. A path of a graph is said to be _____ if it contains all the edges of the graph.

- A. eulerian
- B. hamiltonian
- C. tournament
- D. planar

ANSWER: A

31. Traveling salesman problem is example for_____graph.

- A. eulerian
- B. hamiltonian
- C. tournament
- D. planar

ANSWER: B

32. If a node v is reachable from node u then the path of minimum length u to v is called _____.

- A. reachability
- B. node base
- C. geodesic
- D. accessibility

ANSWER: C

33. The eccentricity of a center in a tree is defined as _____ of the tree.

- A. radius
 - B. diameter
 - C. length
 - D. path
- ANSWER: A

34. $P \rightarrow Q, Q \rightarrow R$ then _____.

- A. $P \rightarrow R$
- B. $R \rightarrow P$
- C. Q
- D. R

ANSWER: A

35. If a normal form contains all minterms, then it is _____.

- A. a tautology
- B. a contradiction
- C. a contingency
- D. both a and b

ANSWER: A

36. PCNF is also called _____.

- A. sum of product canonical form.
- B. product of sum canonical form
- C. sum canonical form
- D. product canonical form

ANSWER: B

37. PDNF is also called _____.

- A. sum of product canonical form
- B. product of sum canonical form
- C. sum canonical form
- D. product canonical form

ANSWER: A

38. Max-terms of two statements are formed by introducing the connective _____.

- A. disjunction
- B. conjunction
- C. negation
- D. conditional

ANSWER: A

39. The Subset relation on a set of sets is _____.

- A. partial ordering
- B. equivalence relation
- C. reflexive and symmetric only
- D. symmetric and transitive only

ANSWER: A

40. A relation R is defined on the set of integers as xRy if and only if $(x+y)$ is even. Which of the following statement is TRUE?

- A. R is not an equivalence relation.
- B. R is an equivalence relation having one equivalence classes
- C. R is an equivalence relation having two equivalence classes
- D. R is an equivalence relation having three equivalence classes

ANSWER: C

41. If $R = \{(1, y), (1, z), (3, y)\}$ then R power $(-1) =$ _____.

- A. $\{(1, a), (y, z)\}$
- B. $\{(y, 1), (z, 1), (y, 3)\}$
- C. $\{(y, a), (1, z), (3, y)\}$
- D. $\{(y, a), (z, a), (3, y)\}$

ANSWER: B

42. Let $R = \{(a,b),(c,d),(b,b)\}$, $S = \{(d,b),(c,b),(a,d)\}$ then R composite $S =$ _____

- A. $\{(a,e),(c,b),(b,e)\}$
- B. $\{(d,b),(c,b),(a,d)\}$
- C. $\{(a,b),(b,b)\}$
- D. $\{(c,b)\}$

ANSWER: D

43. Let R and S be two relations on a set of positive integers I. If $R = \{(a, 3a+a)\}$, $S = \{(a,a+a)\}$ then R composition R composition R = _____.

- A. $\{(a,3a+a)\}$
- B. $\{(a,9a+a)\}$
- C. $\{(a,27a+a)\}$
- D. $\{(a,9a+c)\}$

ANSWER: C

44. The number of relations from $A = \{a,b,c\}$ to $B = \{1,2\}$ are _____.

- A. 6
- B. 8
- C. 32
- D. 64

ANSWER: D

45. The minimum number of edges in a connected graph with n vertices is _____.

- A. n
- B. n-1
- C. n+1
- D. n+2

ANSWER: B

46. The number of distinct simple graphs with up to three nodes is _____.

- A. 7
- B. 9
- C. 15

D. 25

ANSWER: A

47. A graph is planar if and only if it does not contain _____.

- A. subgraphs homeomorphic to K_3 & $K_{3,3}$
- B. subgraphs isomorphic to K_5 or $K_{3,3}$
- C. subgraphs isomorphic to K_3 & $K_{3,3}$
- D. sub graphs homeomorphic to K_5 or $K_{3,3}$

ANSWER: D

48. Maximum number of edges in an n-node undirected graph without self loops is _____.

- A. $[n(n-1)]/2$
- B. $n-1$
- C. n
- D. $[n(n+1)]/2$

ANSWER: A

49. Number of distinct nodes in any elementary path of length p is _____.

- A. p
- B. $p-1$
- C. $p+1$
- D. $p*1$

ANSWER: C

50. The total number of edges in a complete graph of n vertices is _____.

- A. n
- B. $n/2$
- C. $[n(n-1)]/3$
- D. $[n(n-1)]/2$

ANSWER: D

51. A directed complete graph of n vertices contains _____.

- A. one arrow between each pair of distinct vertices
- B. two arrows between each pair of distinct vertices
- C. $n-1$ arrows between each pair of distinct vertices
- D. path between every two distinct vertices

ANSWER: A

52. A directed graph $G = (V, E)$ is said to be finite if its _____.

- A. set V of vertices is finite
- B. set V of vertices & set E of edges are finite
- C. set E of edges are finite
- D. no vertices & edges are repeated

ANSWER: A

53. A state from which a deterministic finite state automata can never come out is called a _____.

- A. trap state
- B. starting symbol

- C. transition table
- D. transition diagram

ANSWER: A

54. If a compound statement is made up of three simple statements then the number of rows in the truth table is _____.

- A. 2
- B. 4
- C. 6
- D. 8

ANSWER: D

55. Let $R = \{(3, 3), (6, 6), (9, 9), (12,12), (3,6), (6,3), (3, 9), (9, 3), (9, 12),(12,9)\}$ be a relation on the set $A = \{3, 6, 9, 12\}$. The relation is _____

- A. reflexive and transitive
- B. reflexive and symmetric
- C. symmetric and transitive
- D. equivalence relation

ANSWER: D

56. Let $R = \{(1,b),(3,d),(2,b)\}$ and $S = \{(b,4),(2,5),(d,a)\}$ be a relation then R composition $S =$ _____.

- A. $\{(1,b),(3,d),(2,b)\}$
- B. $\{(1,4),(3,a),(2,4)\}$
- C. $\{(4,b),(2,5),(3,a)\}$
- D. $\{(1,d),(3,b),(2,c)\}$

ANSWER: B

57. If $R = \{(x, 2x)\}$ and $S = \{(x, 4x)\}$ then R composition $S =$ _____.

- A. $\{(x, 4x)\}$
- B. $\{(x, 2x)\}$
- C. $\{(x, 8x)\}$
- D. $\{(x, 10x)\}$

ANSWER: C

58. If $R = \{(x, 2x)\}$ and $S = \{(x, 5x)\}$ then R composition $S =$ _____.

- A. $\{(x, 4x)\}$
- B. $\{(x, 2x)\}$
- C. $\{(x, 8x)\}$
- D. $\{(x, 10x)\}$

ANSWER: D

59. A regular grammar contains rules of the form _____.

- A. $A \rightarrow AB$
- B. $AB \rightarrow a$
- C. $A \rightarrow aB$
- D. $AB \rightarrow CD$

ANSWER: C

60. A type-2 grammar contains the rules of the form is_____.

- A. a tends to AB
- B. AaB tends to a
- C. A tends to aBC
- D. AB tends to CD

ANSWER: C

61. Let $R = \{(1, 3), (4, 2), (2, 2), (3, 3), (1, 1), (4, 4)\}$ be a relation on the set $A = \{1, 2, 3, 4\}$. The relation R is _____.

- A. transitive
- B. reflexive
- C. not symmetric
- D. function

ANSWER: C

62. The NAND statement is a combination of _____.

- A. NOT and AND
- B. NOT and OR
- C. AND and OR
- D. NOT or OR

ANSWER: A

63. The NOR statement is a combination of _____.

- A. NOT and AND
- B. NOT and OR
- C. AND and OR
- D. NOT or OR

ANSWER: B

64. If a relation is reflexive then in the graph of a relation there must be a loop at _____.

- A. each node
- B. only first node
- C. any two nodes
- D. only first and last nodes

ANSWER: A

65. Which of the following traversal techniques lists the nodes of binary search in ascending order?

- A. pre order
- B. post order
- C. in order
- D. root order

ANSWER: C

66. The grammar $G = \{\{S\}, \{0,1\}, P, S\}$ where $P = \{S \text{ tends to } 0S1, S \text{ tends to } S1\}$ is a _____.

- A. recursively enumerable grammar.
- B. regular grammar
- C. context sensitive grammar
- D. context free grammar

ANSWER: D

67. Which of the following regular expressions identifiers are true?

- A. $(r^*)^* = r$
- B. $(r+s)^* = r^* \cdot s^*$
- C. $r^* \cdot s^* = r^* + s^*$
- D. $(r.s)^* = r^*/s^*$

ANSWER: A

68. In a grammar or language LAMDA is used to denote _____.

- A. empty word
- B. entire set
- C. set of words
- D. set of letters

ANSWER: A

69. The number of letters in a word is called _____.

- A. length
- B. string
- C. syntax
- D. alphabet

ANSWER: A

70. If r is a regular expression then r^* is a _____ expression.

- A. regular
- B. irregular
- C. isomorphic
- D. homomorphic

ANSWER: A

71. An example for regular grammar is _____.

- A. $S \rightarrow Ab$
- B. $AB \rightarrow SAB$
- C. $S \rightarrow aB$
- D. $S \rightarrow aBB$

ANSWER: C

72. If all the productions have single non-terminal in the left hand side then the grammar defined is _____ grammar.

- A. context free
- B. context sensitive
- C. regular
- D. phrase structure

ANSWER: A

73. In Backus Naur Form the symbol $:: =$ is used instead of _____.

- A. $\{ \}$
- B. tends to

C. $\langle \rangle$

D. \$

ANSWER: B

74. Any subset L of A^* is called _____ over A.

A. Language

B. Syntax

C. Alphabet

D. Word

ANSWER: A

75. Let S be a start symbol and $S \rightarrow aA$, $A \rightarrow BA$, $A \rightarrow a$, $B \rightarrow b$ be the productions in a grammar then one of the string derived form the grammar is _____.

A. baba

B. bbaa

C. abba

D. aabb

ANSWER: C

76. If S is a start symbol and $S \rightarrow AB$, $A \rightarrow aB$, $B \rightarrow b$ are the productions then a string generated by the grammar is _____.

A. baa

B. aba

C. abb

D. bab

ANSWER: C

77. In FSA ,the notation for M being in state S_0 , reading the input symbol a, moving one cell right and reaching the state S_1 is given by _____.

A. $f(S_i, x) = S_j$

B. $f(S_0, a) = S_1$

C. $f(S_i, a) = S_j$

D. $f(S_0, x) = S_1$

ANSWER: B

78. If " $S \rightarrow aS$, $S \rightarrow a$ " are the productions in a grammar G, then the grammar is called_____.

A. regular grammar

B. phrase structure grammar

C. context free grammar

D. context sensitive grammar

ANSWER: A

79. The rank of the incidence matrix of any connected graph G with n vertices is _____.

A. n

B. n+1

C. n-1

D. n-2

ANSWER: C

80. The number of 1's in each row of an incidence matrix of a graph G is equal to _____.

- A. the degree of the corresponding vertices
- B. the sum of degrees of all vertices
- C. the degree of the initial vertex
- D. the degree of the terminal vertex

ANSWER: A

81. Each column of an incidence matrix of a graph G has exactly _____.

- A. one 1's
- B. two 1's
- C. one 2's
- D. two 2's

ANSWER: B

82. An undirected graph is tripartite if and only if it has no circuits of _____ lengths

- A. odd
- B. even
- C. distinct
- D. equal

ANSWER: A

83. A graph is bipartite if and only if its chromatic number is _____.

- A. 1
- B. 2
- C. odd
- D. even

ANSWER: B

84. G is strongly connected implies _____.

- A. G is unilaterally connected.
- B. G is bilaterally connected
- C. G is unilaterally connected
- D. G has more than one component

ANSWER: A

85. The number of pendant vertices in a full binary tree with n vertices is _____.

- A. $(n-1)/2$
- B. $(n-1)/2$
- C. $(n+1)/2$
- D. $n/2$

ANSWER: C

86. The number of vertices in a full binary tree is _____.

- A. odd
- B. even
- C. equal
- D. 0

ANSWER: A

87. A binary tree with $2k$ vertices of level k has at least _____ vertices.

- A. 2^k
- B. 2^{k-1}
- C. $2^{k-1}-1$
- D. $2^{k+1}-1$

ANSWER: D

88. For a symmetric digraph, the adjacency matrix is _____.

- A. symmetric
- B. antisymmetric
- C. asymmetric
- D. symmetric and asymmetric

ANSWER: A

89. The diagonal entries of $A A^T$ where A is the adjacency matrix are the _____.

- A. outdegrees of the node
- B. indegrees of the nodes
- C. unit degree of the nodes
- D. in & out degrees of the nodes

ANSWER: A

90. DFSA and NDFSFA represent the _____ language.

- A. regular
- B. context free
- C. context sensitive
- D. phrase structure

ANSWER: A

91. The chromatic number of the chess board is _____.

- A. 1
- B. 2
- C. 3
- D. 4

ANSWER: B

92. The total number of degrees of an isolated node is _____.

- A. 0
- B. 1
- C. 2
- D. 3

ANSWER: A

93. If G is a connected planar graph then it has a vertex of degree _____.

- A. 3 or less
- B. 4 or less
- C. 5 or less

D. 6 or less

ANSWER: C

94. A product of the variable and their negation in a formula is called _____.

- A. an elementary sum
- B. an elementary product
- C. a well-formed formula
- D. an equivalence of relation formula

ANSWER: B

95. A formula consisting of disjunctions of min-terms is called _____.

- A. DNF
- B. CNF
- C. PDNF
- D. PCNF

ANSWER: C

96. The less than relation $<$ on real is _____.

- A. a partial ordering since it is asymmetric and reflexive
- B. a partial ordering since it is anti-symmetric and reflexive
- C. not a partial ordering since it is not asymmetric and not reflexive
- D. not a partial ordering since it is not anti-symmetric and not reflexive

ANSWER: D

97. A relation R in X is said to be a _____, if it is reflexive and symmetric.

- A. void relation
- B. circular
- C. partial order relation
- D. compatibility relation

ANSWER: D

98. The set $X \times X$ itself defines a relation in X is called a _____ relation.

- A. void
- B. universal
- C. partial
- D. equivalence

ANSWER: B

99. A self complemented distributive lattice is called _____.

- A. boolean algebra
- B. modular lattice
- C. complete lattice
- D. self dual lattice

ANSWER: A

100. Every finite subset of a lattice has _____.

- A. a Least Upper Bound and Greatest Lower Bound
- B. many Least Upper Bounds and a Greatest Lower Bound

- C. many Least Upper Bounds and many Greatest Lower Bounds
- D. either some Least Upper Bounds or some Greatest Lower Bounds

ANSWER: A

101. If the lattice (C, \leq) is complemented chain then _____.

- A. $|C| \leq 1$
- B. $|C| \leq 2$
- C. $|C| > 1$
- D. C doesn't exist

ANSWER: B

102. A formula consisting of conjunctions of max-terms is called _____.

- A. DNF
- B. CNF
- C. PCNF
- D. PDNF

ANSWER: C

103. The set of all divisors of 24 are _____.

- A. $\{1, 2, 3, 4, 6, 8, 12, 24\}$
- B. $\{2, 3, 4, 6, 8, 12\}$
- C. $\{1, 3, 6, 12, \}$
- D. $\{2, 4, 6, 8\}$

ANSWER: A

104. Which of the following is Absorption Law?

- A. $a * a \Leftrightarrow a$
- B. $a + (a * b) \Leftrightarrow a$
- C. $a * b \Leftrightarrow a * a$
- D. $(a * b) * c \Leftrightarrow a * (b * c)$

ANSWER: B

105. In a bounded lattice, an element b belongs to L is called a complement of an element a belongs to L if _____.

- A. $a * b = 0$
- B. $a + b = 1$
- C. both a and b
- D. none

ANSWER: C

106. If each non-empty subset of a lattice has a least upper bound and greatest lower bound then the lattice is called _____.

- A. complete
- B. associative
- C. absorption
- D. commutative

ANSWER: A

107. A _____ is a complemented distributive lattice.

- A. boolean homomorphism
- B. boolean algebra
- C. boolean isomorphism
- D. boolean function

ANSWER: D

108. Boolean expression except 0 expressed in an equivalent form is called _____.

- A. canonical
- B. sum
- C. product
- D. standard

ANSWER: A

109. _____ relations are useful in solving certain minimization problems of switching theory.

- A. Void
- B. Universal
- C. Compatibility
- D. Equivalence

ANSWER: C

110. The number of elements in a square matrix of order n is _____.

- A. n power 3
- B. n power 4
- C. n power 5
- D. n power 2

ANSWER: D

111. Every non-trivial tree has at least _____ vertices of degree one.

- A. 1
- B. 2
- C. 3
- D. 4

ANSWER: B

112. A _____ is an edge e such that $w(G-e) > w(G)$.

- A. cut vertex of G
- B. cut edge of G
- C. ends of G
- D. path of G

ANSWER: B

113. Every connected graph contains a _____.

- A. tree
- B. sub tree
- C. spanning tree
- D. spanning subtree

ANSWER: C

114. A minimal non-empty edge cut of G is called a _____.

- A. bond
- B. cycle
- C. path
- D. tour

ANSWER: A

115. A connected graph that has no cut vertices is called a _____.

- A. block
- B. bond
- C. cycle
- D. tour

ANSWER: A

116. Every block with at least three vertices are _____ connected.

- A. 1
- B. 2
- C. 3
- D. 4

ANSWER: B

117. A graph is Eulerian if it contains _____.

- A. Euler tour
- B. Euler trail
- C. Hamiltonian path
- D. Euler path

ANSWER: A

118. Hamilton cycle is a cycle that contains every _____ of G .

- A. path
- B. cycle
- C. vertex
- D. edge

ANSWER: C

119. Collection of human beings with 4 heads, 2 legs and two hands is a _____.

- A. null set
- B. finite set
- C. infinite set
- D. equal set

ANSWER: A

120. A set containing no element is called _____.

- A. null set
- B. finite set
- C. infinite set
- D. equal set

ANSWER: A

121. $A = \{1,3,5,7,9\}$ is a _____.

- A. null set
- B. finite set
- C. singleton set
- D. infinite set

ANSWER: B

122. The number of Indians in the world is _____.

- A. finite set
- B. universal set
- C. infinite set
- D. equal set

ANSWER: A

123. If in the truth table the answer column has the truth values both TRUE and FALSE then it is said to be _____.

- A. tautology
- B. contradiction
- C. contingency
- D. equivalence relation

ANSWER: C

124. To prove the statement P tautologically implies the statement Q, it is enough to prove that _____.

- A. P conditional Q is a contradiction
- B. P conditional Q is a tautology
- C. P biconditional is a contradiction
- D. P biconditional Q is a tautology

ANSWER: B

125. To prove the statement P is tautologically equivalent to the statement Q, it is enough to prove that _____.

- A. P conditional Q is a contradiction
- B. P conditional Q is a tautology
- C. P biconditional Q is a contradiction
- D. P biconditional Q is a tautology

ANSWER: D

126. Let $R = \{(1,2),(3,4),(2,6)\}$ and $S = \{(4,3),(2,5),(6,6)\}$ be a relation then R composite S = _____.

- A. $\{(1,5),(3,3),(2,6)\}$
- B. $\{(1,5),(3,6),(2,5)\}$
- C. $\{(4,4),(2,5),(3,3)\}$
- D. $\{(1,1),(3,3),(2,2)\}$

ANSWER: A

127. The binary relation $R = \{(0, 0), (1, a)\}$ on $A = \{0, 1, 2, 3, \}$ is _____.

- A. reflexive, not symmetric, transitive

- B. not reflexive, symmetric, transitive
- C. reflexive, symmetric, not transitive
- D. reflexive, not symmetric, not transitive

ANSWER: B

128. There are only five distinct Hasse diagrams for partially ordered sets that contain _____ elements.

- A. 2
- B. 3
- C. 4
- D. 6

ANSWER: B

129. The production $S \rightarrow aB$ is of the type _____ grammar.

- A. 0
- B. 1
- C. 2
- D. all the above

ANSWER: D

130. The production $S \rightarrow A$ is of the type _____ grammar.

- A. 0
- B. 1
- C. 2
- D. all the above

ANSWER: A

131. A regular grammar contains rules of the form is _____.

- A. $A \rightarrow AB$
- B. $AB \rightarrow a$
- C. $A \rightarrow aB$
- D. $AB \rightarrow CD$

ANSWER: C

132. If an edge e is said to join the vertices u and v then the vertices u and v are called ____.

- A. initial vertices
- B. terminal vertices
- C. ends of e
- D. all the above

ANSWER: B

133. Edges intersect only at their ends are called _____.

- A. planar
- B. loop
- C. link
- D. non planar

ANSWER: A

134. Two vertices which are incident with the common edge are called _____ vertices.

- A. distinct
- B. directed
- C. adjacent
- D. loops

ANSWER: C

135. An edge with identical ends is called _____.

- A. complete graph
- B. bipartite graph
- C. loops
- D. link

ANSWER: C

136. An edge with same ends is called _____.

- A. complete graph
- B. bipartite graph
- C. loops
- D. link

ANSWER: D

137. In a graph if few edges have directions and few do not have directions then the graph is called _____.

- A. multi graph
- B. directed graph
- C. undirected graph
- D. mixed graph

ANSWER: D

138. If two edges have same vertices as its terminal vertices those edges are called ____.

- A. parallel
- B. adjacent
- C. incident
- D. distinct

ANSWER: A

139. Each edge has one end in set X and one end in set Y then the graph (X, Y) is called _____ graph.

- A. bipartite
- B. simple
- C. complete
- D. trivial

ANSWER: A

140. The graph defined by the vertices and edges of a _____ is bipartite.

- A. square
- B. cube
- C. single
- D. both square and cube

ANSWER: B

141. To any graph G there corresponds a vertex in a matrix called _____matrix.

- A. incidence
- B. adjacency
- C. square
- D. null

ANSWER: A

142. If H is a sub graph of G then G is a _____ of H .

- A. proper sub graph
- B. inducted sub graph
- C. spanning subgraph
- D. super graph

ANSWER: D

143. If the graph G_1 and G_2 has no vertex in common then it is said to be _____.

- A. disjoint
- B. edge disjoint
- C. union
- D. intersection

ANSWER: A

144. The degree of vertex v in G is _____.

- A. number of edges of G incident with v
- B. number of loops in G
- C. number of links in G
- D. number of sub graph in G

ANSWER: A

145. If the edges of a walk W are distinct then W is called _____.

- A. path
- B. trial
- C. walk
- D. tour

ANSWER: D

146. If the vertices of a walk W are distinct then W is called _____.

- A. path
- B. trial
- C. walk
- D. tour

ANSWER: A

147. Each loop counting has _____ edges.

- A. 1
- B. 2
- C. 3
- D. 4

ANSWER: B

148. The statements that we consider initially are simple statements called _____ statements.

- A. molecular
- B. compound
- C. atomic
- D. simple

ANSWER: C

149. The statements formed from atomic statements are called _____ statements.

- A. molecular
- B. compound
- C. atomic
- D. simple

ANSWER: A

150. The negation of the statement is formed by introducing _____.

- A. not
- B. and
- C. or
- D. if

ANSWER: A

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