

Subject Code	CA 2.2
Subject	Discrete Mathematics
Paper Code	254202

QUE. NO.	QUESTION	ANS
1.	Let P: I am in Bangalore.; Q: I love cricket.; then $q \rightarrow p$ (q implies p) is? (A) If I love cricket then I am in Bangalore (B) If I am in Bangalore then I love cricket (C) I am not in Bangalore (D) I love cricket	A
2.	Let $L(x, y)$ be the statement "x loves y," where the domain for both x and y consists of all people in the world. Use quantifiers to express, "Joy is loved by everyone." (A) $\forall x L(x, \text{Joy})$ (B) $\forall y L(\text{Joy}, y)$ (C) $\exists y \forall x L(x, y)$ (D) $\exists x \neg L(\text{Joy}, x)$	A
3.	R is a binary relation on a set S and R is reflexive if and only if _____ (A) $r(R) = R$ (B) $s(R) = R$ (C) $t(R) = R$ (D) $f(R) = R$	A
4.	The set of odd and even positive integers closed under multiplication is _____ (A) A free semigroup of (M, \times) (B) A subsemigroup of (M, \times) (C) A semigroup of (M, \times) (D) A subgroup of (M, \times)	B
5.	For a connected planar simple graph $G=(V, E)$ with $e= E =16$ and $v= V =9$, then find the number of regions that are created when drawing a planar representation of the graph? (A) 321 (B) 9 (C) 1024 (D) 596	B
6.	Which of the following is true? (A) Prim's algorithm can also be used for disconnected graphs (B) Kruskal's algorithm can also run on the disconnected graphs (C) Prim's algorithm is simpler than Kruskal's algorithm (D) In Kruskal's sort edges are added to MST in decreasing order of their weights	B
7.	Every teacher is liked by some student (A) $\forall (x) [\text{teacher}(x) \rightarrow \exists (y) [\text{student}(y) \rightarrow \text{likes}(y, x)]]$ (B) $\forall (x) [\text{teacher}(x) \rightarrow \exists (y) [\text{student}(y) \wedge \text{likes}(y, x)]]$ (C) $\exists (y) \forall (x) [\text{teacher}(x) \rightarrow [\text{student}(y) \wedge \text{likes}(y, x)]]$ (D) $\forall (x) [\text{teacher}(x) \wedge \exists (y) [\text{student}(y) \rightarrow \text{likes}(y, x)]]$	B
8.	Which of the following ways can be used to represent a graph? (A) Adjacency List and Adjacency Matrix (B) Incidence Matrix (C) Adjacency List, Adjacency Matrix as well as Incidence Matrix (D) No way to represent	C

9.	<p>Match the following</p> <table><tr><td>A. Groups</td><td>I. Associativity</td></tr><tr><td>B. Semi groups</td><td>II. Identity</td></tr><tr><td>C. Monoids</td><td>III. Commutative</td></tr><tr><td>D. Abelian Groups</td><td>IV Left inverse</td></tr></table> <p>Codes A B C D</p> <table><tr><td>(A) IV I II III</td><td>(B) III I IV II</td></tr><tr><td>(C) II III I IV</td><td>(D) I II III IV</td></tr></table>	A. Groups	I. Associativity	B. Semi groups	II. Identity	C. Monoids	III. Commutative	D. Abelian Groups	IV Left inverse	(A) IV I II III	(B) III I IV II	(C) II III I IV	(D) I II III IV	A
A. Groups	I. Associativity													
B. Semi groups	II. Identity													
C. Monoids	III. Commutative													
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(A) IV I II III	(B) III I IV II													
(C) II III I IV	(D) I II III IV													
10.	<p>What is the identity element In the group $G = \{2, 4, 6, 8\}$ under multiplication modulo 10?</p> <p>(A) 5 (B) 9 (C) 6 (D) 12</p>	C												
11.	<p>If A, B, C be three sets such that $A \cup B = A \cup C$ and $A \cap B = A \cap C$, then?</p> <p>(A) $A=B$ (B) $A=C$ (C) $B=C$ (D) $A=B=C$</p>	C												
12.	<p>What is the number of vertices of degree 2 in a path graph having n vertices, here $n>2$.</p> <p>(A) $n-2$ (B) n (C) 2 (D) 0</p>	A												
13.	<p>(a,b) what is a?</p> <p>(A) Domain (B) Range (C) Domain & Range (D) None of the mentioned</p>	A												
14.	<p>A subgroup has the properties of _____</p> <p>(A) Closure, associative (B) Commutative, associative, closure (C) Inverse, identity, associative (D) Closure, associative, Identity, Inverse</p>	D												
15.	<p>What is an inverse of $-i$ in the multiplicative group if $\{1, -1, i, -i\}$ is?</p> <p>(A) -1 (B) 1 (C) i (D) None of these</p>	C												
16.	<p>Which of the following satisfies commutative law?</p> <p>(A) \wedge (B) \vee (C) \leftrightarrow (D) All of the mentioned</p>	D												
17.	<p>An important application of binary tree is _____</p> <p>(A) Huffman coding (B) Stack implementation (C) Queue implementation (D) Traverse a cyclic graph</p>	A												
18.	<p>The premises $(p \wedge q) \vee r$ and $r \rightarrow s$ implies which of the conclusion?</p> <p>(A) $p \vee r$ (B) $p \vee s$ (C) $q \vee s$ (D) $q \vee r$</p>	B												

19.	<p>The binary relation $\{(1,1), (2,1), (2,2), (2,3), (2,4), (3,1), (3,2)\}$ on the set $\{1, 2, 3\}$ is _____</p> <p>(A) Reflective, symmetric and transitive (B) Irreflexive, symmetric and transitive (C) Neither reflective, nor irreflexive but transitive (D) Irreflexive and antisymmetric</p>	C
20.	<p>An expression tree is a kind of?</p> <p>(A) Binary search tree (B) Fibonacci tree (C) Binary tree (D) Treap</p>	C
21.	<p>Prim's algorithm is a _____</p> <p>(A) Divide and conquer algorithm (B) Greedy algorithm (C) Dynamic Programming (D) Approximation algorithm</p>	B
22.	<p>If we choose Prim's Algorithm for uniquely weighted spanning tree instead of Kruskal's Algorithm, then</p> <p>(A) We'll get a different spanning tree. (B) We'll get the same spanning tree. (C) Spanning will have less edges. (D) Spanning will not cover all vertices.</p>	B
23.	<p>The travelling salesman problem can be solved using _____</p> <p>(A) A spanning tree (B) A minimum spanning tree (C) Bellman – Ford algorithm (D) DFS traversal</p>	B
24.	<p>A rule of inference that introduces existential quantifiers</p> <p>(A) Universal Generalization (B) Existential Generalization (C) Existential Instantiation (D) Existential Quantifier</p>	B
25.	<p>Let P: We should be honest., Q: We should be dedicated., R: We should be overconfident. Then 'We should be honest or dedicated but not overconfident.' is best represented by?</p> <p>(A) $\sim P \vee \sim Q \vee R$ (B) $P \wedge \sim Q \wedge R$ (C) $P \vee Q \wedge R$ (D) $P \vee Q \wedge \sim R$</p>	D
26.	<p>Let P and Q be statements, then $P \leftrightarrow Q$ is logically equivalent to _____</p> <p>(A) $P \leftrightarrow \sim Q$ (B) $\sim P \leftrightarrow Q$ (C) $\sim P \leftrightarrow \sim Q$ (D) None of the mentioned</p>	C
27.	<p>Length of the walk of a graph is ?</p> <p>(A) The number of vertices in walk W (B) The number of edges in walk W (C) Total number of edges in a graph (D) Total number of vertices in a graph</p>	B
28.	<p>The compound statement $A \rightarrow (A \rightarrow B)$ is false, then the truth values of A, B are respectively _____</p> <p>(A) T, T (B) F, T (C) T, F (D) F, F</p>	C
29.	<p>A group $(M, *)$ is said to be abelian if _____</p> <p>(A) $(x+y)=(y+x)$ (B) $(x*y)=(y*x)$ (C) $(x+y)=x$ (D) $(y*x)=(x+y)$</p>	B

30.	<p>Let P: We give a nice overall squad performance, Q: We will win the match. Then the symbolic form of “We will win the match if and only if we give a nice overall squad performance.” is?</p> <p>(A) $P \vee Q$ (B) $Q \wedge P$ (C) $Q \leftrightarrow P$ (D) $\sim P \vee Q$</p>	C
31.	<p>The statement $(\sim P \leftrightarrow Q) \wedge \sim Q$ is true when?</p> <p>(A) P: True Q: False (B) P: True Q: True (C) P: False Q: True (D) P: False Q: False</p>	A
32.	<p>33. The problem of finding a path in a graph that visits every vertex exactly once is called?</p> <p>(A) Hamiltonian cycle problem (B) Subset sum problem 34. (C) Turnpike reconstruction problem (D) Hamiltonian path problem</p>	D
33.	<p>Let P, Q, R be true, false, false, respectively, which of the following is true?</p> <p>(A) $P \wedge (Q \wedge \sim R)$ (B) $(P \rightarrow Q) \wedge \sim R$ (C) $Q \leftrightarrow (P \wedge R)$ (D) $P \leftrightarrow (Q \vee R)$</p>	C
34.	<p>Which of the following is not a phase of project management?</p> <p>(A) Project planning (B) Project scheduling (C) Project controlling (D) Project being</p>	D
35.	<p>In an n-ary tree, each vertex has at most _____ children.</p> <p>(A) n (B) n^4 (C) $n * n$ (D) $n-1$</p>	A
36.	<p>Which of the following statements for a simple graph is correct?</p> <p>(A) Every path is a trail (B) Every trail is a path (C) Every trail is a path as well as every path is a trail (D) Path and trail have no relation</p>	A
37.	<p>Which of the following represents: $\sim A$ (negation of A) if A stands for “I like badminton but hate maths”?</p> <p>(A) I hate badminton and maths (B) I do not like badminton or maths (C) I dislike badminton but love maths (D) I hate badminton or like maths</p>	D
38.	<p>Which of the following is false in the case of a spanning tree of a graph G?</p> <p>(A) It is tree that spans G (B) It is a sub graph of the G (C) It includes every vertex of the G (D) It can be either cyclic or acyclic</p>	D
39.	<p>Two labeled trees are isomorphic if _____</p> <p>(A) Graphs of the two trees are isomorphic (B) The two trees have same label (C) Graphs of the two trees are isomorphic and the two trees have the same label (D) Graphs of the two trees are cyclic</p>	C
40.	<p>$\sim A \vee \sim B$ is logically equivalent to?</p> <p>(A) $\sim A \rightarrow \sim B$ (B) $\sim A \wedge \sim B$ (C) $A \rightarrow \sim B$ (D) $B \vee A$</p>	C

41.	$A \rightarrow (A \vee q)$ is a _____ (A) Tautology (B) Contradiction (C) Contingency (D) None of the mentioned	A
42.	A graph with all vertices having equal degree is known as a _____ (A) Multi Graph (B) Regular Graph (C) Simple Graph (D) Complete Graph	B
43.	What are the inverse of the conditional statement "If you make your notes, it will be a convenient in exams." (A) "If you make notes, then it will be a convenient in exams." (B) "If you do not make notes, then it will not be a convenient in exams." (C) "If it will not be a convenient in exams, then you did not make your notes." (D) "If it will be a convenient in exams, then you make your notes	B
44.	If $(G, .)$ is a group such that $a^2 = e, \forall a \in G$, then G is (A) Semi group (B) Abelian group (C) Non abelian group (D) None of these	B
45.	$(p \rightarrow q) \wedge (p \rightarrow r)$ is logically equivalent to _____ (A) $p \rightarrow (q \wedge r)$ (B) $p \rightarrow (q \vee r)$ (C) $p \wedge (q \vee r)$ (D) $p \vee (q \wedge r)$	A
46.	The statement, "Every comedian is funny" where $C(x)$ is "x is a comedian" and $F(x)$ is "x is funny" and the domain consists of all people. (A) $\exists x(C(x) \wedge F(x))$ (B) $\forall x(C(x) \wedge F(x))$ (C) $\exists x(C(x) \rightarrow F(x))$ (D) $\forall x(C(x) \rightarrow F(x))$	D
47.	Which of the following is De-Morgan's law? (A) $P \wedge (Q \vee R) \equiv (P \wedge Q) \vee (P \wedge R)$ (B) $\sim(P \wedge R) \equiv \sim P \vee \sim R, \sim(P \vee R) \equiv \sim P \wedge \sim R$ (C) $P \vee \sim P \equiv \text{True}, P \wedge \sim P \equiv \text{False}$ (D) None of the mentioned	B
48.	Translate $\forall x \exists y (x < y)$ in English, considering domain as a real number for both the variable. (A) For all real number x there exists a real number y such that x is less than y (B) For every real number y there exists a real number x such that x is less than y (C) For some real number x there exists a real number y such that x is less than y (D) For each and every real number x and y such that x is less than y	A
49.	The statement, "At least one of your friends is perfect". Let $P(x)$ be "x is perfect" and let $F(x)$ be "x is your friend" and let the domain be all people. (A) $\forall x (F(x) \rightarrow P(x))$ (B) $\forall x (F(x) \wedge P(x))$ (C) $\exists x (F(x) \wedge P(x))$ (D) $\exists x (F(x) \rightarrow P(x))$	C
50. Is a directed tree in which out degree of each node is less than or equal to two (A) Unary tree (B) Binary tree (C) Trinary tree (D) Both B and C	B

51.	<p>Let $T(x, y)$ mean that student x likes dish y, where the domain for x consists of all students at your school and the domain for y consists of all dishes. Express $\neg T(\text{Amit}, \text{South Indian})$ by a simple English sentence.</p> <p>(A) All students does not like South Indian dishes. (B) Amit does not like South Indian people. (C) Amit does not like South Indian dishes. (D) Amit does not like some dishes.</p>	D
52.	<p>If two cycle graphs G_m and G_n are joined together with a vertex, the number of spanning trees in the new graph is _____</p> <p>(A) $m+n-1$ (B) $m-n$ (C) $m*n$ (D) $m*n+1$</p>	C
53.	<p>What rule of inference is used in this argument? "If I go for a balanced diet, then I will be fit. If I will be fit, then I will remain healthy. Therefore, if I go for a balanced diet, then I will remain healthy."</p> <p>(A) Modus tollens (B) Modus ponens (C) Disjunctive syllogism (D) Hypothetical syllogism</p>	D
54.	<p>What is the postfix expression of $(A+B)-C*(D/E))+F$?</p> <p>(A) $A B + C D E / * - F +$ (B) $A B C D E + / * F - +$ (C) $A B C + * D E / F + -$ (D) $A B + C - * D E / F +$</p>	A
55.	<p>The rank of smallest equivalence relation on a set with 12 distinct elements is _____</p> <p>(A) 12 (B) 144 (C) 136 (D) 79</p>	A
56.	<p>Minimum number of unique colors required for vertex coloring of a graph is called?</p> <p>(A) Vertex matching (B) Chromatic index (C) Chromatic number (D) Color number</p>	C
57.	<p>Amongst the properties {reflexivity, symmetry, antisymmetry, transitivity} the relation $R = \{(a, b) \in \mathbb{N}^2 \mid a \neq b\}$ satisfies _____ property.</p> <p>(A) symmetry (B) transitivity (C) antisymmetry (D) reflexivity</p>	A
58.	<p>Depth First Search is equivalent to which of the traversal in the Binary Trees?</p> <p>(A) Pre-order Traversal (B) Post-order Traversal (C) Level-order Traversal (D) In-order Traversal</p>	A
59.	<p>An algebraic structure _____ is called a semi group.</p> <p>(A) $(P, *)$ (B) $(Q, +, *)$ (C) $(P, +)$ (D) $(+, *)$</p>	A
60.	<p>State true or false.</p> <p>i) An empty tree is also a binary tree. ii) In strictly binary tree, the out-degree of every node is either 0 or 2.</p> <p>(A) True, False (B) False, True (C) True, True (D) False, False</p>	C

61.	The binary relation $U = \Phi$ (empty set) on a set $A = \{11, 23, 35\}$ is ____ (A) Neither reflexive nor symmetric (B) Symmetric and reflexive (C) Transitive and reflexive (D) Transitive and symmetric	D
62.	All possible spanning trees of graph G (A) Have same number of edges and vertices. (B) Have same number of edges and but not vertices. (C) Have same number of vertices but not edges. (D) Depends upon algorithm being used.	A
63.	The number of edges from the node to the deepest leaf is called _____ of the tree. (A) Height (B) Depth (C) Length (D) Width	A
64.	Consider the relation: $R' (x, y)$ if and only if $x, y > 0$ over the set of non-zero rational numbers, then R' is ____ (A) not equivalence relation (B) an equivalence relation (C) transitive and asymmetry relation (D) reflexive and antisymmetric relation	B
65.	Consider the binary relation, $A = \{(a, b) \mid b = a - 1 \text{ and } a, b \text{ belong to } \{1, 2, 3\}\}$. The reflexive transitive closure of A is? (A) $\{(a, b) \mid a \geq b \text{ and } a, b \text{ belong to } \{1, 2, 3\}\}$ (B) $\{(a, b) \mid a > b \text{ and } a, b \text{ belong to } \{1, 2, 3\}\}$ (C) $\{(a, b) \mid a \leq b \text{ and } a, b \text{ belong to } \{1, 2, 3\}\}$ (D) $\{(a, b) \mid a = b \text{ and } a, b \text{ belong to } \{1, 2, 3\}\}$	A
66.	How many unique colors will be required for proper vertex coloring of a bipartite graph having n vertices? (A) 0 (B) 1 (C) 2 (D) n	C
67.	Determine the characteristics of the relation aRb if $a^2 = b^2$. (A) Transitive and symmetric (B) Reflexive and asymmetry (C) Trichotomy, antisymmetry, and irreflexive (D) Symmetric, Reflexive, and transitive	D
68.	A compound proposition that is neither a tautology nor a contradiction is called a ____ (A) Contingency (B) Equivalence (C) Condition (D) Inference	A
69.	Which of the following statement is correct? (A) $p \vee q \equiv q \vee p$ (B) $\neg(p \wedge q) \equiv \neg p \vee \neg q$ (C) $(p \vee q) \vee r \equiv p \vee (q \vee r)$ (D) All of mentioned	D
70.	The less-than relation, $<$, on a set of real numbers is ____ (A) not a partial ordering because it is not asymmetric and irreflexive equals antisymmetric (B) a partial ordering since it is asymmetric and reflexive (C) a partial ordering since it is antisymmetric and reflexive (D) not a partial ordering because it is not antisymmetric and reflexive	A

71.	A non empty set A is termed as an algebraic structure _____ (A) with respect to binary operation * (B) with respect to ternary operation ? (C) with respect to binary operation + (D) with respect to unary operation –	A
72.	A graph G is called aif it is a connected acyclic graph ? (A)Cyclic graph (B) Regular graph (C)Tree (D) Not a graph	C
73.	The graph representing universal relation is called _____ (A) complete digraph (B) partial digraph (C) empty graph (D) partial subgraph	A
74.	In the traversal we process all of a vertex's descendants before we move to an adjacent vertex. (A) Depth First (B) Breadth First (C) Width First (D) Depth Limited	A
75.	When inorder traversing a tree resulted E A C K F H D B G; the preorder traversal would return (A) FAEKCDHBG (B) FAEKCDHGB (C) EAFKHDCBG (D) FEAKDCHBG	B
76.	If P is always against the testimony of Q, then the compound statement $P \rightarrow (P \vee \sim Q)$ is a _____ (A) Tautology (B) Contradiction (C) Contingency (D) None of the mentioned	A
77.	Degree of a graph with 12 vertices is _____ (A) 25 (B) 56 (C) 24 (D) 212	C
78.	What will be the chromatic index for a complete graph having n vertices (consider n to be an even number)? (A) n (B) n + 1 (C) n – 1 (D) 2n + 1	C
79.	In a finite graph the number of vertices of odd degree is always _____ (A) even (B) odd (C) even or odd (D) infinite	A
80.	Let P: I am in Delhi.; Q: Delhi is clean.; then $q \wedge p$ (q and p) is? (A) Delhi is clean and I am in Delhi (B) Delhi is not clean or I am in Delhi (C) I am in Delhi and Delhi is not clean (D) Delhi is clean but I am in Mumbai	A
81.	A connected planar graph having 6 vertices, 7 edges contains _____ regions. (A) 15 (B) 3 (C) 1 (D) 11	B
82.	Which traversal of tree resembles the breadth first search of the graph? (A) Preorder (B) Inorder (C) Postorder (D) Level order	D

83.	If each and every vertex in G has degree at most 23 then G can have a vertex colouring of _____ (A) 24 (B) 23 (C) 176 (D) 54	A
84.	How many properties can be held by a group? (A) 2 (B) 3 (C) 5 (D) 4	C
85.	Matrix multiplication is a/an _____ property. (A) Commutative (B) Associative (C) Additive (D) Disjunctive	B
86.	A _____ is a graph which has the same number of edges as its complement must have number of vertices congruent to $4m$ or $4m$ modulo 4 (for integral values of number of edges). (A) Subgraph (B) Hamiltonian graph (C) Euler graph (D) Self complementary graph	D
87.	Which of the following pairs of traversals is not sufficient to build a binary tree from the given traversals? (A) Preorder and In order (B) Preorder and Postorder (C) Inorder and Post order (D) None of the Above	B
88.	A graph having an edge from each vertex to every other vertex is called a _____ (A) Tightly Connected (B) Strongly Connected (C) Weakly Connected (D) Loosely Connected	A
89.	In a _____ the vertex set and the edge set are finite sets. (A) finite graph (B) bipartite graph (C) infinite graph (D) connected graph	B
90.	Suppose a relation $R = \{(3, 3), (5, 5), (5, 3), (5, 5), (6, 6)\}$ on $S = \{3, 5, 6\}$. Here R is known as _____ (A) Equivalence relation (B) Reflexive relation (C) Symmetric relation (D) Transitive relation	A
91.	$p \rightarrow q$ is logically equivalent to _____ (A) $\neg p \vee \neg q$ (B) $p \vee \neg q$ (C) $\neg p \vee q$ (D) $\neg p \wedge q$	C
92.	Any subset of edges that connects all the vertices and has minimum total weight, if all the edge weights of an undirected graph are positive is called _____ (A) subgraph (B) tree (C) hamiltonian cycle (D) grid	B
93.	A graph which has the same number of edges as its complement must have number of vertices congruent to _____ or _____ modulo 4 (for integral values of number of edges). (A) $6k, 6k-1$ (B) $4k, 4k+1$ (C) $k, k+2$ (D) $2k+1, k$	C

94.	Which of the following is true? (A) A graph may contain no edges and many vertices (B) A graph may contain many edges and no vertices (C) A graph may contain no edges and no vertices (D) A graph may contain no vertices and many edges	B
95.	A graph G has the degree of each vertex is ≥ 3 say, $\deg(V) \geq 3 \forall V \in G$ such that $3 V \leq 2 E $ and $3 R \leq 2 E $, then the graph is said to be _____ (R denotes region in the graph) (A) Planner graph (B) Polyhedral graph (C) Homomorphic graph (D) Isomorphic graph	B
96.	A complete n-node graph K_n is planar if and only if _____ (A) $n \geq 6$ (B) $n^2 = n + 1$ (C) $n \leq 4$ (D) $n + 3$	C
97.	An isomorphism of graphs G and H is a bijection f the vertex sets of G and H. Such that any two vertices u and v of G are adjacent in G if and only if _____ (A) f(u) and f(v) are contained in G but not contained in H (B) f(u) and f(v) are adjacent in H (C) $f(u * v) = f(u) + f(v)$ (D) $f(u) = f(u)^2 + f(v)^2$	B
98.	A _____ in a graph G is a circuit which consists of every vertex (except first/last vertex) of G exactly once. (A) Euler path (B) Hamiltonian path (C) Planar graph (D) Path complement graph	B
99.	A trail in a graph can be described as _____ (A) a walk without repeated edges (B) a cycle with repeated edges (C) a walk with repeated edges (D) a line graph with one or more vertices	A
100.	The full form of CPM is _____ (A) Critical Path Method (B) Control Path Method (C) Critical Plan Management (D) Control Path Management	A

Subject Code	CA 2.3
Subject	System Programming
Paper Code	254203
Paper Setter Name	Dr. Ghanshyam Digambar Ramteke

QUE. NO.	QUESTION	ANS
1	_____ is designed to solve a specific problem or to do a specific task. (A) Application Software (B) User (C) System Software (D) Utility Software	A
2	The mother tongue of a computer is..... (A) Assembly Language (B) Machine Language (C) BASIC Language (D) None of the above	B
3	Mnemonics are used in: (A) C Language (B) Machine Language (C) BASIC Language (D) Assembly Language	D
4	Which is not a computer translator? (A) Interpreter (B) Compiler (C) Word Processor (D) Assembler	C
5	The source code refers to: (A) Original program code (B) Translated code (C) Instructions in mnemonic (D) Instructions in binary code	A
6	Which of these translates assembly code into machine code? (A) Compiler (B) Interpreter (C) Editor	D

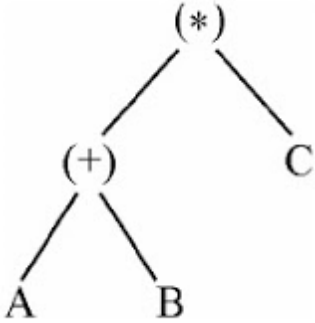
	(D) Assembler	
7	<p>The program that combines the output of compiler with various library functions to produce an executable image is called –</p> <p>(A) Loader (B) Linker (C) Assembler (D) Debugger</p>	B
8	<p>What is true for the compiler?</p> <p>(A) A compiler does a conversion line by line as the program is run. (B) A compiler converts the whole of a higher level program code into machine code in one step. (C) A compiler is general purpose language providing very efficient execution (D) None of the above</p>	D
9	<p>What is not true for the interpreter?</p> <p>(A) An interpreter executes the instructions line by line (B) An interpreter will find the errors (C) An interpreter will generate the object code (D) None of the above</p>	D
10	<p>The language processor can be any of the following types:</p> <p>(A) Compiler (B) Interpreter (C) Assembler (D) All of the above</p>	D
11	<p>In which from the following phases, the compiler will find the errors?</p> <p>(A) Lexical Analysis (B) Semantic Analysis (C) Both A and B (D) None of the above</p>	C
12	<p>Which one is not true for lexical analysis?</p> <p>(A) It recognizes the character stream and check the validity of it. (B) It shows the error of use invalid datatype. (C) It shows the error of invalid name of variable. (D) All of these.</p>	D
13	<p>Consider the following grammar: Set of alphabets $\Sigma = \{0, \dots, 9, +, *, (,)\}$</p> <p>$E \rightarrow I$ $E \rightarrow E + E$ $E \rightarrow E * E$ $E \rightarrow (E)$ $I \rightarrow \epsilon \mid 0 \mid 1 \mid \dots \mid 9$</p> <p>From the above grammar String 3*2+5 can be derived in a way of</p>	A

	(A) Ambiguous (B) Unambiguous (C) Both A and B (D) None of the above	
14	Which of the following is not a phase of compiler? (A) syntax (B) lexical (C) testing (D) code generation	C
15	Which is not a component of a grammar? (A) States (B) Terminals (C) Production (D) None of the above	D
16	Which are the data registers? (A) AX: Accumulator (B) BX: Base (C) CX: Count (D) All of these	D
17	Output of parser is (A) Set of tokens (B) Parse tree (C) Object code (D) Intermediate code	B
18	Mnemonic has.....primary fields. (A) mnemonic and opcode (B) name and address (C) mnemonic and name (D) name and opcode	A
19	Which of the following is not a task of pass-I assembler? (A) Build the symbol table (B) Perform LC processing (C) Synthesize the target program (D) Construct intermediate representation	D
20	An assembly language is a machine dependent,level programming language which is specific to a certain computer system. (A) high (B) low (C) machine (D) none of these	B

21	<p>In a simple assembly language, the first operand is always:</p> <p>(A) Memory Word</p> <p>(B) Register</p> <p>(C) Assembly Mnemonic</p> <p>(D) None of these</p>	B
22	<p>Source program is read</p> <p>(A) Character by character</p> <p>(B) Line by line</p> <p>(C) Page by page</p> <p>(D) Module wise</p>	B
23	<p>The DS in assembly language stands for:</p> <p>(A) Data Store</p> <p>(B) Date Storage</p> <p>(C) Declare Storage</p> <p>(D) Declarative Statement</p>	D
24	<p>Which assembler directive indicates that the first word of the target program generated by the assembler should be placed in the memory word with address?</p> <p>(A) LABEL</p> <p>(B) END</p> <p>(C) START</p> <p>(D) STOP</p>	C
25	<p>.....is the process of binding an external reference to the correct link time address.</p> <p>(A) Translation</p> <p>(B) Linking</p> <p>(C) Loading</p> <p>(D) Assembler</p>	B
26	<p>Which of the following system software reside in main memory always?</p> <p>(A) Text editor</p> <p>(B) Assembler</p> <p>(C) Linker</p> <p>(D) Loader</p>	D
27	<p>A linker program</p> <p>(A) places the program in the memory for the purpose of execution.</p> <p>(B) relocates the program to execute from the specific memory area allocated to it.</p> <p>(C) links the program with other programs needed for its execution.</p> <p>(D) interfaces the program with the entities generating its input data.</p>	C
28	<p>Relocation bits used by relocating loader are specified by</p> <p>(A) relocating loader itself</p> <p>(B) assembler or translator</p> <p>(C) macro processor</p> <p>(D) linker</p>	D

29	Resolution of externally defined symbols is performed by (A) linker (B) loader (C) compiler (D) editor	A
30in system software resides in main memory always. (A) Linker (B) Loader (C) Text editor (D) Assembler	B
31	Aviews the entire text as a stream of characters. (A) stream editor (B) screen editor (C) line editor (D) Structure editor	A
32	Symbol table can be used for (A) Checking type compatibility (B) Storage allocation (C) Suppressing duplication of error message (D) All of these	D
33andeditors maintain multiple representations of text. (A) Screen, stream (B) Line, stream (C) Stream, structure (D) Structure, screen	B
34	Themaintains an internal form which is used to perform the edit operations. (A) editor (B) loader (C) linker (D) assembler	A
35	Word processors are also called.....editors. (A) screen (B) structure (C) stream (D) document	D
36	A special class of structure editors, callededitors, are used in programming environments. (A) syntax (B) syntax directed (C) line (D) stream	B

37	Vi is an example of : (A) screen editor (B) structure editor (C) stream editor (D) line editor	A
38	Which option is not correct type of editors? (A) Line (B) Structure (C) Stream (D) New	D
39	A software tool is a : (A) Editors (B) Debug monitors (C) Programming environment (D) All of the above	D
40	What is the instruction format in assembly language? (A) Labels-Mnemonics-Operands (B) Labels-Operands-Mnemonics (C) Operands-Mnemonics-Labels (D) None of the above	A
41	Find out the correct the types of operands in assembly language. (A) Register (B) Storage (C) Immediate (D) All of these	D
42	Which is the correct type of assembly statements? (A) Imperative statement (B) Declarative statement (C) Assembler directive statement (D) All of the above	D
43	Declarative macro is divided into the groups: (A) Data Macro (B) Equate Macro (C) SIP Macro (D) All of the above	D
44	Two assembler directives in Macro definition: (A) MACRO (B) MEND (C) Both A and B (D) None of these	C

45	Object code is the output of (A) Operating System (B) Compiler or Assembler (C) only Assembler (D) only Compiler	B
46	'Macro' in an assembly level program is (A) sub program (B) a complete program (C) a hardware portion (D) relative coding	A
47	Grammar of the programming is checked at phase of compiler. (A) semantic analysis (B) code generation (C) syntax analysis (D) syntax analysis	C
48	Macro-processors are (A) Hardware (B) Compiler (C) Registers (D) None of the above	B
49	Which of the following expression is represented by the parse tree?  <pre> graph TD Root((*)) --- Plus((+)) Root --- C[C] Plus --- A[A] Plus --- B[B] </pre> (A) $(A + B) * C$ (B) $A + * BC$ (C) $A + B * C$ (D) $A * C + B$	A
50	Which of the following are Assembler Directives? (i) EQU (ii) ORIGIN (iii) START (iv) END (A) (i), (ii), (iii) and (iv) (B) (iii) and (iv) (C) (i), (iii) and (iv)	A

	(D) (ii), (iii) and (iv)	
51	A Top-down Parse generates: (A) Right-most derivation (B) Right-most derivation in reverse (C) Left-most derivation (D) Left-most derivation in reverse	C
52	A general macro processor is an in built function of: (A) Loader (B) Linker (C) Editor (D) Assembler	D
53	Which activity is included in the first pass of two pass assemblers? (A) Build the symbol table (B) Construct the intermediate code (C) Separate mnemonic opcode and operand fields (D) All of the above	D
54	Code optimization is responsibility of: (A) Application programmer (B) System programmer (C) Operating system (D) All of the above	B
55	Which phase of compiler is correct? (A) Code generation (B) Code optimizer (C) Intermediate code generation (D) All of the above	D
56	Intermediate Code form generates: (A) Infix to Postfix (B) Quadruples (C) Triples (D) All of these	D
57	A Grammar can also be represented as: (A) Non-terminals (B) Terminals (C) Production rule (D) All of these	D
58	Find out the correct classification of grammar for unrestricted grammar (A) Type-0 grammar (B) Type-1 grammar (C) Type-2 grammar (D) Type-3 grammar	A

59	<p>Give the production rules: $E \rightarrow E+E \mid E * E \mid (E) \mid \text{int}$ The present string (int * int + int) is ambiguous or not.</p> <p>(A) Ambiguous (B) Not ambiguous (C) Both A and B (D) None of these</p>	A
60	<p>Ambiguity means</p> <p>(A) Multiple parse trees (B) More than one right-most derivation (C) More than one left-most derivation (D) All of these</p>	D
61	<p>Select one of the following options for component of system software.</p> <p>(A) Compiler, Interpreter and Assembler (B) Loader and Linker (C) Both A and B (D) None of these</p>	C
62	<p>Two main types of computer software are</p> <p>(A) System software and Application software (B) LINUX AND UNIX (C) Disk drive and antivirus (D) Windows and MAC OS</p>	A
63	<p>In computers, operating system and utility programs are examples of</p> <p>(A) System software (B) Device drivers (C) Customized software (D) Application software</p>	A
64	<p>Special purpose software are</p> <p>(A) System software (B) Device drivers (C) Utility software (D) Application software</p>	D
65	<p>Which of the following option is computer general-purpose software?</p> <p>(A) System software (B) Package software (C) Database software (D) Application software</p>	A
66	<p>Select one of the following options, which can compiler check?</p> <p>(A) Syntax Error (B) Logical Error (C) Both A and B (D) None of the above</p>	A

67	Which of the following is a phase of a compilation process? (A) Lexical analysis (B) Code generation (C) Both A and B (D) None of these	C
68	The computer language generally translated to pseudocode is (A) pascal (B) machine (C) fortran (D) assembly	D
69	Object program is a (A) translation of high-level language into machine language (B) program to be translated into machine language. (C) Both A and B (D) None of these	A
70	Assembler is a machine dependent, because of? (A) Argument list array (ALA) (B) Macro definition table (MDT) (C) Pseudo operation table (POT) (D) Mnemonics operation table (MOT)	D
71	Macro processor is an inbuilt function of (A) Editor (B) Linker (C) Loader (D) Assembler	D
72	Which is the translator used by second generation languages? (A) Interpreter (B) Linker (C) Compiler (D) Assembler	D
73	Assembly language programs are written using (A) Hex code (B) ASCII code (C) Mnemonics (D) Any code	C
74	The instruction format 'register to register' has a length of (A) 1 byte (B) 2 bytes (C) 3 bytes (D) 4 bytes	B

75	<p>In a two pass assembler the object code generation is done during the</p> <p>(A) Zeroeth pass (B) First pass (C) Second pass (D) None of these</p>	C
76	<p>The Grammar can be defined as: $G=(V, \Sigma, P, S)$. In the given definition, what does S represents?</p> <p>(A) Accepting State (B) Sensitive Grammar (C) Starting Variable (D) None of the above</p>	C
77	<p>Find out the correct classification of grammar for regular grammar</p> <p>(A) Type-0 grammar (B) Type-1 grammar (C) Type-2 grammar (D) Type-3 grammar</p>	D
78	<p>What is the linker?</p> <p>(A) is same as the loader (B) is required to create a load module (C) is always used before programs are executed (D) None of above</p>	B
79	<p>The translator which perform macro expansion is called a</p> <p>(A) Macro processor (B) Macro pre-processor (C) Micro pre-processor (D) assembler</p>	B
80	<p>A macro definition consists of</p> <p>(A) Macro pre-processor statements (B) A macro prototype statement (C) One or more model statements (D) All of the above</p>	D
81	<p>A macro is</p> <p>(A) a small program inside a program (B) a unit of specification for program generation through expansion (C) set of special instructions (D) None of the above</p>	B
82	<p>A _____ statement declare the name of macro.</p> <p>(A) macro prototype (B) macro definition (C) macro identification (D) None of the above</p>	A

83	During macro expansion each statement is replaced by (A) the original program (B) the sequence of assembly statement (C) by specific symbols (D) None of the above	B
84	Each macro statement is marked with the _____ sign preceded it. (A) + (B) @ (C) ~ (D) \$	A
85	A model statement contains call for another macro is called as (A) referential macro call (B) nested macro call (C) inbuilt macro call (D) inherited macro call	B
86	A macro within a macro is called (A) macro-within-macro (B) nested macro (C) macro-in-macro (D) none of the above	B
87	The beginning of the macro can be represented as (A) START (B) BEGIN (C) MACRO (D) MEND	C
88	Nested Macro calls are expanded using the (A) FIFO rule (First in first out) (B) LIFO (Last in First out) (C) FILO rule (First in last out) (D) None of the above	B
89	Macro-processors are _____ (A) Hardware (B) Compilers (C) Registers (D) None of the above	B
90	Which is not a function of a loader? (A) Allocation (B) Translation (C) Relocation (D) loading	B

91	<p>In an absolute loading scheme which loader function is accomplished by loader</p> <p>(A) reallocation (B) Allocation (C) Linking (D) loading</p>	A
92	<p>An interpreter is</p> <p>(A) A program that places programs into memory and prepares them for execution (B) A program that appears to execute a source program as if it were machine language (C) A program that automate the translation of assembly language into machine language (D) A program that accepts a program written in high level language and produces an object program</p>	B
93	<p>The advantages of assembly level programming is</p> <p>(A) flexibility of programming is more (B) chances of error are less (C) debugging is easy (D) All of the above</p>	D
94	<p>A compiler is a software tool that translates _____ that the computer can understand.</p> <p>(A) Algorithm into data (B) Source code into data (C) Computer language into data (D) None of the above</p>	B
95	<p>The object code is then passed through a program called a _____ which turns it into an executable program.</p> <p>(A) Integer (B) Source code (C) Linker (D) None of the above</p>	C
96	<p>In computers, application software executes.....</p> <p>(A) all the time (B) when required (C) any time (D) for few hours</p>	B
97	<p>In which way(s) can a macro processor for assembly language be implemented?</p> <p>(A) independent one-pass processor (B) independent two-pass processor (C) processor incorporated into pass of a standard two-pass assembler (D) all of the above</p>	D

98	<p>What are x and y in the following macro definition? macro Add x, y Load y Mul x Store y end macro</p> <p>(A) Variables (B) Identifiers (C) formal parameters (D) actual parameters</p>	C
99	<p>The end of a macro can be represented by the directive</p> <p>(A) END (B) ENDS (C) MEND (D) ENDD</p>	C
100	<p>Inserting the statements and instructions represented by macro, directly at the place of the macroname, in the program, is known as</p> <p>(A) calling a macro (B) inserting a macro (C) initializing a macro (D) none of the above</p>	A