	CA-305 Java Programming	ANS
1)	Which class allows parsing of command line arguments? a) Args b) JCommander c) Command Line d) Input	B
2)	Which of the following is not a Java features? a)Dynamic b)Architecture Neutral c)Use of pointers d)Object-oriented	C
3)	How do we pass command line argument in Eclipse? a) Arguments tab b) Variable tab c) Cannot pass command line argument in eclipse d) Environment variable tab	A
4)	Which package contains the Random class? a)java.util package b)java.lang package c)java.awt package d)java.io package	A
5)	Can command line arguments be converted into int automatically if required? a) Yes b) No c) Compiler Dependent d) Only ASCII characters can be converted	B
6)	Which of the following is an immediate subclass of the Panel class? a)Applet class b)Window class c)Frame class d)Dialog class	A
7)	Which of these is a correct statement about args in the following line of code? public static void main(String args[]) a) args is a String b) args is a Character c) args is an array of String d) args in an array of Character	C

8)	Which of these data types is used to store command line arguments? a) Array b) Stack c) String d) Integer	C
9)	Which keyword is used for accessing the features of a package? a)package b)import c)extends d)export	B
10)	How many threads can be executed at a time? a)Only one thread b)Multiple threads c)Only main (main() method) thread d)Two threads	B
11)	Which of these selection statements test only for equality? a) if b) switch c) if & switch d) none of the mentioned	B
12)	Which of these keywords is used to define interfaces in Java? a) class b) Interface c) cls d) var	A
13)	Which of the following can be operands of arithmetic operators? a) Numeric b) Boolean c) Characters d) Both Numeric & Characters	D
14)	Which of the following is not OOPS concept in Java? a) Inheritance b) Encapsulation c) Polymorphism d) Compilation	D

15)	What will be the output of the following Java program?
	
	class Output
	{
	static void main(String args[])
	{
	int x , y = 1;
	x = 10;
	if(x != 10 && x / 0 == 0)
	System.out.println(y);
	else
	System.out.println(++y);
	}
	}
	
	a) 1
	b) 2
	c) Runtime Error
	d) Compilation Error
		D

16)	Which of these can be used to differentiate two or more methods having the same name? a) Parameters data type b) Number of parameters c) Return type of method d) All of the mentioned	D
17)	What is the process of defining more than one method in a class differentiated by parameters? a) Function overriding b) Function overloading c) Function doubling d) None of the mentioned	B
18)	Which of the following statements are incorrect? a) String is a class b) Strings in java are mutable c) Every string is an object of class String d) Java defines a peer class of String, called StringBuffer, which allows string to be altered	B
19)	Which of these method of String class can be used to test to strings for equality? a) isequal() b) isequals() c) equal() d) equals()	D

20)	Which of these keywords is used to refer to member of base class from a subclass? a) upper b) super c) this d) none of the mentioned	B
21)	String in Java is a? a) class b) object c) variable d) character array	A

22)	What will be the output of the following Java program?
	
	class access
	{
	static int x;
	void increment()
	{
	x++;
	}
	}
	class static_use
	{
	public static void main(String args[])
	{
	access obj1 = new access();
	access obj2 = new access();
	obj1.x = 0;
	obj1.increment();
	obj2.increment();
	System.out.println(obj1.x + " " + obj2.x);
	}
	}
	
	a) 1 2
	b) 1 1
	c) 2 2
	d) Compilation Error
		C

23)	Which of these methods must be made static? a) main() b) delete() c) run() d) finalize()	A

24)	Which of the following statements are incorrect? a) Variables declared as final occupy memory b) final variable must be initialized at the time of declaration c) Arrays in java are implemented as an object d) All arrays contain an attribute-length which contains the number of elements stored in the array	A
25)	Which of these cannot be declared static? a) class b) object c) variable d) method	B
26)	Which of these keywords is used to prevent content of a variable from being modified? a) final b) last c) constant d) static	A
27)	Arrays in Java are implemented as? a) class b) object c) variable d) none of the mentioned	B
28)	Which component is responsible for converting bytecode into machine specific code? a) JVM b) JDK c) JIT d) JRE	A
29)	Which is the modifier when there is none mentioned explicitly? a) protected b) private c) public d) default	D
30)	Which of these values is returned by read() method is end of file (EOF) is encountered? a) 0 b) 1 c) -1 d) Null	C

31)	What is true about a break? a) Break stops the execution of entire program b) Break halts the execution and forces the control out of the loop c) Break forces the control out of the loop and starts the execution of next iteration d) Break halts the execution of the loop for certain time frame	B
32)	How can a protected modifier be accessed? a) accessible only within the class b) accessible only within package c) accessible within package and outside the package but through inheritance only d) accessible by all	C
33)	Which of these method of String class can be used to test to strings for equality? a) isequal() b) isequals() c) equal() d) equals()	D
34)	What is the process by which we can control what parts of a program can access the members of a class? a) Polymorphism b) Abstraction c) Encapsulation d) Recursion	C
35)	Which of these packages contains all the classes and methods required for even handling in Java? a) java.applet b) java.awt c) java.event d) java.awt.event	D
36)	What is the process of defining a method in terms of itself, that is a method that calls itself? a) Polymorphism b) Abstraction c) Encapsulation d) Recursion	D
37)	Which of this keyword can be used in a subclass to call the constructor of superclass? a) super b) this c) extent d) extends	A

38)	Which of these can be overloaded? a) Methods b) Constructors c) All of the mentioned d) None of the mentioned	C
39)	Which of these methods is used to write() into a file? a) put() b) putFile() c) write() d) writeFile()	C
40)	Which exception is thrown when java is out of memory? a) MemoryFullException b) MemoryOutOfBoundsException c) OutOfMemoryError d) MemoryError	C
41)	Which of these keywords can be used to prevent Method overriding? a) static b) constant c) protected d) final	D
42)	Which of the following has the highest memory requirement? a) Heap b) Stack c) JVM d) Class	C
43)	What is the return type of Constructors? a) int b) float c) void d) none of the mentioned	D
44)	What would be the behaviour if this() and super() used in a method? a) Runtime error b) Throws exception c) compile time error d) Runs successfully	C
45)	Which class is used to generate random number? a) java.lang.Object b) java.util.randomNumber c) java.util.Random d) java.util.Object	C

46)	Which of the following is a method having same name as that of its class? a) finalize b) delete c) class d) constructor	D
47)	When does Exceptions in Java arises in code sequence? a) Run Time b) Compilation Time c) Can Occur Any Time d) None of the mentioned	A
48)	What is the return type of Constructors? a) int b) float c) void d) none of the mentioned	D
49)	Which of the following is a method having same name as that of its class? a) finalize b) delete c) class d) constructor	D

50)	What will be the output of the following Java program?
	
	class Output
	{
	public static void main(String args[])
	{
	final int a=10,b=20;
	while(a<b)
	{
	
	System.out.println("Hello");
	}
	System.out.println("World");
	
	}
	}
	
	a) Hello
	b) run time error
	c) Hello world
	d) compile time error
		D

51)	Which method can be defined only once in a program? a) main method b) finalize method c) static method d) private method	A
52)	Which of this statement is incorrect? a) switch statement is more efficient than a set of nested ifs b) two case constants in the same switch can have identical values c) switch statement can only test for equality, whereas if statement can evaluate any type of boolean expression d) it is possible to create a nested switch statements	B

53)	What will be the output of the following Java program?
	
	class comma_operator
	{
	public static void main(String args[])
	{
	int sum = 0;
	for (int i = 0, j = 0; i < 5 & j < 5; ++i, j = i + 1)
	sum += i;
	System.out.println(sum);
	}
	}
	
	a) 5
	b) 6
	c) 14
	d) compilation error
		B

54)	Which of these keywords must be used to monitor for exceptions? a) try b) finally c) throw d) catch	A
55)	Which of these access specifiers can be used for an interface? a) private b) Protected c) Public d) All of the mentioned	C

56)	Which of the following loops will execute the body of loop even when condition controlling the loop is initially false? a) do-while b) while c) for d) none of the mentioned	A
57)	Which of these keywords is used by a class to use an interface defined previously? a) import b) Import c) implements d) Implements	C
58)	Which of these selection statements test only for equality? a) if b) switch c) if & switch d) none of the mentioned	B
59)	Which of these keywords is used to define interfaces in Java? a) interface b) Interface c) intf d) Intf	A
60)	Decrement operator, −−, decreases the value of variable by what number? a) 1 b) 2 c) 3 d) 4	A
61)	Which of the following option leads to the portability and security of Java? a)Bytecode is executed by JVM b)The applet makes the Java code secure and portable c)Use of exception handling d)Dynamic binding between objects	A
62)	Which of the following is true about the anonymous inner class? a)It has only methods b)Objects can't be created c)It has a fixed class name d)It has no class name	D
63)	What do you mean by nameless objects? a)An object created by using the new keyword. b)An object of a superclass created in the subclass. c)An object without having any name but having a reference. d)An object that has no reference.	D

64)	Which option is false about the final keyword? a)A final method cannot be overridden in its subclasses. b)A final class cannot be extended. c)A final class cannot extend other classes. d)A final method can be inherited.	A
65)	Which of these classes are the direct subclasses of the Throwable class? a) RuntimeException and Error class b) Exception and VirtualMachineError class c) Error and Exception class d) IOException and VirtualMachineError class	C
66)	Which of these operators is used to allocate memory for an object? a) malloc b) alloc c) new d) give	C
67)	Which of these data types is used to store command line arguments? a) Array b) Stack c) String d) Integer	C
68)	Which of these method of String class is used to obtain character at specified index? a) char() b) Charat() c) charat() d) charAt()	D
69)	Which component is responsible to optimize bytecode to machine code? a) JVM b) JDK c) JIT d) JRE	C
70)	Which concept of Java is a way of converting real world objects in terms of class? a) Polymorphism b) Encapsulation c) Abstraction d) Inheritance	C
71)	Which of these keywords is used to manually throw an exception? a) try b) finally c) throw d) catch	C

72)	Which of these class is super class of all the events? a) EventObject b) EventClass c) ActionEvent d) ItemEvent	A
73)	Which of these methods is a part of Abstract Window Toolkit (AWT) ? a) display() b) paint() c) drawString() d) transient()	B
74)	Which of the following is the correct way of implementing an interface A by class B? a) class B extends A{ } b) class B implements A{ } c) class B imports A{ } d) None of the mentioned	B
75)	Arrays in Java are implemented as? a) class b) object c) variable d) none of the mentioned	B
76)	Which of these is supported by method overriding in Java? a) Abstraction b) Encapsulation c) Polymorphism d) None of the mentioned	C
77)	Which of these is necessary to specify at time of array initialization? a) Row b) Column c) Both Row and Column d) None of the mentioned	A
78)	Which of the following statements are incorrect? a) String is a class b) Strings in java are mutable c) Every string is an object of class String d) Java defines a peer class of String, called StringBuffer, which allows string to be altered	B
79)	Which of these cannot be declared static? a) class b) object c) variable d) method	B

80)	Which of these functions is called to display the output of an applet? a) display() b) paint() c) displayApplet() d) PrintApplet()	B
81)		
82)	What is the process of defining more than one method in a class differentiated by parameters? a) Function overriding b) Function overloading c) Function doubling d) None of the mentioned	B
83)	Which of these methods must be made static? a) main() b) delete() c) run() d) finalize()	A
84)	Which of these are selection statements in Java? a) if() b) for() c) continue d) break	A
85)	Which of these keywords must be used to handle the exception thrown by try block in some rational manner? a) try b) finally c) throw d) catch	D
86)	Which of these operators is used to allocate memory for an object? a) malloc b) alloc c) new d) give	C
87)	What is the process of defining more than one method in a class differentiated by method signature? a) Function overriding b) Function overloading c) Function doubling d) None of the mentioned	B

88)	Which of the following is a method having same name as that of it's class? a) finalize b) delete c) class d) constructor	D
89)	Which of this statement is incorrect? a) All object of a class are allotted memory for the all the variables defined in the class b) If a function is defined public it can be accessed by object of other class by inheritation c) main() method must be made public d) All object of a class are allotted memory for the methods defined in the class	D
90)	Which annotation is used to represent command line input and assigned to correct data type? a) @Input b) @Variable c) @Command Line d) @Parameter	D
91)	What is the use of @syntax? a) Allows multiple parameters to be passed b) Allows one to put all your options into a file and pass this file as a parameter c) Allows one to pass only one parameter d) Allows one to pass one file containing only one parameter	B

92)	What would be the output of the following code snippet if variable a=10?
	
	if(a<=0)
	{
	  if(a==0)
	  {
	  System.out.println("1 ");
	  }
	  else
	  {
	  System.out.println("2 ");
	  }
	}
	System.out.println("3 ");
	
	a) 1 2
	b) 2 3
	c) 1 3
	d) 3
		D

93)	What is true about a break? a) Break stops the execution of entire program b) Break halts the execution and forces the control out of the loop c) Break forces the control out of the loop and starts the execution of next iteration d) Break halts the execution of the loop for certain time frame	B
94)	What is true about do statement? a) do statement executes the code of a loop at least once b) do statement does not get execute if condition is not matched in the first iteration c) do statement checks the condition at the beginning of the loop d) do statement executes the code more than once always	A
95)	Which of the following is used with the switch statement? a) Continue b) Exit c) break d) do	C
96)	Which of the following is not a decision making statement? a) if b) if-else c) switch d) do-while	D
97)	Which of the following is not a valid flow control statement? a) exit() b) break c) continue d) return	A
98)	In order to restrict a variable of a class from inheriting to subclass, how variable should be declared? a) Protected b) Private c) Public d) Static	B
99)	Which of the following is used for implementing inheritance through an interface? a) inherited b) using c) extends d) implements	D

100)	What would be the result if a class extends two interfaces and both have a method with same name and signature? Lets assume that the class is not implementing that method. a) Runtime error b) Compile time error c) Code runs successfully d) First called method is executed successfully	B

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QNo.	MCA CA-302 Design and Analysis of Algorithm (312251) (251312)	ANS
1	Which of the following is incorrect? Algorithms can be represented: A) as pseudo codes **B) as syntax** C) as programs D) as flowcharts	B
2	A data structure that follows the FIFO principle. **A) Queue** B) LL C) Stack D) Union	A
3	Steps of Divide and Conquer approach Select one: **A) Divide, Conquer and Combine** B) Combine, Conquer and Divide C) Combine, Divide and Conquer D) Divide, Combine and Conquer	A
4	The complexity of searching an element from a set of n elements using Binary search algorithm is Select one: A) O(n log n) **B) O(log n)** C) O(n2) D) O(n)	B
5	Which of the following algorithms is NOT a divide & conquer algorithm by nature? A MAXMIN **B Heap Sort** C Merge Sort D Quick Sort	B
6	Merge sort uses which of the following technique to implement sorting? A) backtracking B) greedy algorithm **C) divide and conquer** D) dynamic programming	C
7	Which of the following method is used for sorting in merge sort? **A) merging** B) partitioning C) selection D) exchanging	A
8	Which is the common method to choose a pivot element? A) choosing a random element as pivot **B) choosing the first element as pivot** C) choosing the last element as pivot D) median-of-three partitioning method	B

9	To Sort the element in ascending order using Heap Sort we should create_____ tree. **a) MaxHeap** b) MinHeap c) Heap d) None of the above	A
10.	Which of the following statements is true about recursion? A) Recursion is always better than iteration **B) Recursion uses more memory compared to iteration** C) Recursion uses less memory compared to iteration D) Iteration is always better and simpler than recursion	B
11	Path Compression algorithm performs in which of the following operations? A) Create operation B) Insert operation **C) Find operation** D) Delete operation	C
12	In the Union/Find algorithm, the ranks of the nodes on a path will increase monotonically from? **A) leaf to root** B) root to node C) root to leaf D) left subtree to right subtree	A
13	Which of the following asymptotic notations is used to represent worst case complexity? a) Theta **b) Big-O** c) Omega d) None of the above	B
14	Strassen's algorithm for 2X2 Matrix Multiplication is a/an_____ algorithm. A) **Non- recursive** B) Recursive C) Approximation D) Accurate	A
15	Strassen's matrix multiplication algorithm follows _____ technique. A) Greedy technique B) Dynamic Programming **C) Divide and Conquer** D) Backtracking	C
16	The number of edges from the root to the node is called _____ of the tree. A) Height **B) Depth** C) Length D) Width	B

17	What is a full binary tree? A) Each node has exactly zero or two children **B) Each node has exactly two children** C) All the leaves are at the same level D) Each node has exactly one or two children	B
18	What is a complete binary tree? A) Each node has exactly zero or two children B) A binary tree, which is completely filled, with the possible exception of the bottom level, which is filled from right to left C) **A binary tree, which is completely filled, with the possible exception of the bottom level, which is filled from left to right** D) A tree In which all nodes have degree 2	C
19	Which of the following properties does a simple graph not hold? **A) Must be connected** B) Must be unweighted C) Must have no loops or multiple edges D) Must have no multiple edges	A
20	For a given graph G having v vertices and e edges which is connected and has no cycles, which of the following statements is true? A) v=e **B) v = e+1** C) v + 1 = e D) v = e-1	B
21	How many rules are there for Removal of Recursion a) 10 b) 11 c) 12 **d) 13**	D
22	The worst case complexity of quick sort is _____ A) O(n) B) O(log n) **C) $O(n^2)$** D) O(n log n)	C
23	In a max-heap, element with the greatest key is always in the which node? A) Leaf node B) First node of left sub tree **C) root node** D) First node of right sub tree	C
24	The main measure for efficiency algorithm are- A) Processor and Memory B) Complexity and Capacity C) Data and Space D) **Time and space**	D
25	Heap can be used as _____ **A) Priority queue** B) Stack	A

	C) A decreasing order array D) Normal Array	
26	What will be the position of 5, when a max heap is constructed on the input elements 5, 70, 45, 7, 12, 15, 13, 65, 30, 25? A) 5 will be at root **B) 5 will be at last level** C) 5 will be at second level D) 5 can be anywhere in heap	B
27	What is the worst case time complexity of merge sort? A) **O(n log n)** B) O(n2) C) O(n2 log n) D) O(n log n2)	A
28	Which of the following case does not exist in complexity theory? A) Best case B) Worst case C) Average case D) **Null case**	D
29	Which of the following is true? **A) Prim's algorithm initializes with a vertex** B) Prim's algorithm initializes with a edge C) Prim's algorithm initializes with a vertex which has smallest edge D) Prim's algorithm initializes with a forest	A
30	Prim's algorithm is a _____ A) Divide and conquer algorithm **B) Greedy algorithm** C) Dynamic Programming D) Approximation algorithm	B
31	Prim's algorithm resembles Dijkstra's algorithm. **A) True** B) False	A
32	Kruskal's algorithm is best suited for the sparse graphs than the prim's algorithm. **A) True** B) False	A
33	Which of the following is false about Prim's algorithm? A) It is a greedy algorithm **B) It constructs MST by selecting edges in increasing order of their weights** C) It never accepts cycles in the MST D) It can be implemented using the Fibonacci heap	B
34	Every graph has only one minimum spanning tree. A) True **B) False**	B

35	Consider a complete graph G with 4 vertices. The graph G has ____ spanning trees. A) 15 B) 8 **C) 16** D) 13	C
36	Kruskal's algorithm is used to _____ **A) find minimum spanning tree** B) find single source shortest path C) find all pair shortest path algorithm D) traverse the graph	A
37	Kruskal's algorithm is a _____ A) divide and conquer algorithm B) dynamic programming algorithm **C) greedy algorithm** D) approximation algorithm	C
38	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
39	Which of the following is false about the Kruskal's algorithm? A) It is a greedy algorithm B) It constructs MST by selecting edges in increasing order of their weights **C) It can accept cycles in the MST** D) It uses union-find data structure	C
40	Consider the following statements. S1. Kruskal's algorithm might produce a non-minimal spanning tree. S2. Kruskal's algorithm can efficiently implemented using the disjoint-set data structure. A) S1 is true but S2 is false B) Both S1 and S2 are false C) Both S1 and S2 are true **D) S2 is true but S1 is false**	D
41	Dijkstra's Algorithm is used to solve _____ problems. A) All pair shortest path **B) Single source shortest path** C) Network flow D) Sorting	B
42	Which of the following is the most commonly used data structure for implementing Dijkstra's Algorithm? A) Max priority queue B) Stack C) Circular queue **D) Min priority queue**	D
43	What is the time complexity of Dijikstra's algorithm? A) O(N)	C

	B) $O(N^3)$ **C) $O(N^2)$** D) O(logN)	
44	Dijkstra's Algorithm cannot be applied on _____ A) Directed and weighted graphs **B) Graphs having negative weight function** C) Weighted graphs D) Undirected and unweighted graphs	B
45	How many priority queue operations are involved in Dijkstra's Algorithm? A) 1 **B) 3** C) 2 D) 4	B
46	Dijkstra's Algorithm is the prime example for _____ **A) Greedy algorithm** B) Branch and bound C) Back tracking D) Dynamic programming	A
47	Which of the problems cannot be solved by backtracking method? A) n-queen problem B) subset sum problem C) hamiltonian circuit problem **D) travelling salesman problem**	D
48	Backtracking algorithm is implemented by constructing a tree of choices called as? **A) State-space tree** B) State-chart tree C) Node tree D) Backtracking tree	A
49	What happens when the backtracking algorithm reaches a complete solution? A) It backtracks to the root **B) It continues searching for other possible solutions** C) It traverses from a different route D) Recursively traverses through the same route	B
50	A node is said to be _____ if it has a possibility of reaching a complete solution. A) Non-promising **B) Promising** C) Succeeding D) Preceding	B
51	In what manner is a state-space tree for a backtracking algorithm constructed? **A) Depth-first search** B) Breadth-first search C) Twice around the tree D) nearest neighbor first	A
52	In general, backtracking can be used to solve? A) Numerical problems	C

	B) Exhaustive search **C) Combinatorial problems** D) Graph coloring problems	
53	How many solutions are there for 8 queens on 8*8 board? A) 12 B) 91 **C) 92** D) 93	C
54	In how many directions do queens attack each other? A) 1 B) 2 **C) 3** D) 4	C
55	Placing n-queens so that no two queens attack each other is called? **A) n-queen's problem** B) 8-queen's problem C) Hamiltonian circuit problem D) subset sum problem	A
56	Where is the n-queens problem implemented? A) carom **B) chess** C) ludo D) cards	B
57	Minimum number of unique colors required for vertex coloring of a graph is called? A) vertex matching B) chromatic index **C) chromatic number** D) color number	C
58	How many unique colors will be required for proper vertex coloring of an empty graph having n vertices? A) 0 **B) 1** C) 2 D) n	B
59	What will be the chromatic number for a complete graph having n vertices? A) 0 B) 1 **C) n** D) n!	C
60	The 0/1 Knapsack problem is an example of _____ A) Greedy algorithm **B) Dynamic programming** C) Graph coloring problems D) Divide and conquer	B

61	The Fractional Knapsack problem is an example of _____ **A) Greedy algorithm** B) Dynamic programming C) Graph coloring problems D) Divide and conquer	A
62	. If a problem can be solved by combining optimal solutions to non-overlapping problems, the strategy is called _____ A) Dynamic programming B) Greedy **C) Divide and conquer** D) Recursion	C
63	Which of the following problems should be solved using dynamic programming? A) Mergesort B) Binary search **C) Longest common subsequence** D) Quicksort	C
64	Which of the following problems is NOT solved using dynamic programming? A) 0/1 knapsack problem B) Matrix chain multiplication problem C) All Pairs shortest Path **D) Fractional knapsack problem**	D
65	When a top-down approach of dynamic programming is applied to a problem, it usually _____ A) Decreases both, the time complexity and the space complexity **B) Decreases the time complexity and increases the space complexity** C) Increases the time complexity and decreases the space complexity D) Increases both, the time complexity and the space complexity	B
66	The Breadth First Search traversal of a graph will result into? A) Linked List **B) Tree** C) Graph with back edges D) Arrays	B
67	The Data structure used in standard implementation of Depth First Search is? **A) Stack** B) Queue C) Linked List D) Tree	A
68	The Data structure used in standard implementation of Breadth First Search is? A) Stack **B) Queue** C) Linked List D) Tree	B

69	The Depth First Search traversal of a graph will result into? A) Linked List **B) Tree** C) Graph with back edges D) Array	B
70	Topological sort can be applied to which of the following graphs? A) Undirected Cyclic graph B) Directed Cyclic graph C) Undirected Acyclic graph **D) Directed Acyclic graph**	D
71	Most Efficient Time Complexity of Topological Sorting is? (V - number of vertices, E - number of edges) **A) O(V+E)** B) O(V) C) O(E) D) None of the above	A
72	Topological sort starts from a node which has? A) Maximum degree **B) Minimum degree** C) Any degree D) None of the above	B
73	What can be the applications of topological sorting? A) Finding prerequisite of a task B) Finding deadlock in operating system C) Finding cycle in graph **D) All of the above**	D
74	Topological sort can be implemented by? A) using Depth First Search B) using Breath First Search C) **Both DFS & BFS** D) None of the above	C
75	Topological sort is equivalent to which of the traversals in trees? A) Preorder B) Postorder C) Inorder D) Level Order	B
76	Branch and bound is a _____ **A) problem solving technique** B) data structure C) sorting algorithm D) type of tree	A
77	To which of the following class does a CNF-satisfiability problem belong? A) NP class B) P class	C

	C) NP complete D) NP hard	
78	How many steps are required to prove that a decision problem is NP complete? A) 1 **B) 2** C) 3 D) 4	B
79	Which of the following problems is not NP complete? A) Hamiltonian circuit B) Bin packing C) Partition problem **D) Halting problem**	D
80	What does NP stands for in complexity classes theory? A) Non polynomial **B) Non-deterministic polynomial** C) Both (A) and (B) D) None of the mentioned	B
81	The hardest of NP problems can be: **A) NP-complete** B) NP-hard C) P D) None of the mentioned	A
82	Travelling sales man problem belongs to which of the class? A) P **B) NP** C) Linear D) None of the mentioned	B
83	A problem which is both _____ and _____ is said to be NP complete. **A) NP, P** B) NP, NP hard C) P, P complete D) None of the mentioned	A
84	The problem 3-SAT and 2-SAT are A) both in P B) both NP Complete **C) NP Complete and in P respectively** D) undecidable	C
85	An important application of binary tree is _____ **A) Huffman coding** B) stack implementation C) queue implementation D) traverse a cyclic graph	A
86	In a binary search tree, which of the following traversals would print the numbers in the ascending order? A) Level-order traversal B) Pre-order traversal C) Post-order traversal **D) In-order traversal**	D

87	Which of the following methods can be used to solve the longest common subsequence problem? A) Recursion B) Dynamic programming **C) Both recursion and dynamic programming** D) Greedy algorithm	C
88	Consider the strings “PQRSTPQRS” and “PRATPBRQRPS”. What is the length of the longest common subsequence? A) 9 B) 8 **C) 7** D) 6	C
89	Consider the two matrices P and Q which are 10 x 20 and 20 x 30 matrices respectively. What is the number of multiplications required to multiply the two matrices? A) 10 * 20 B) 20 * 30 C) 10 * 30 **D) 10 * 20 * 30**	D
90	Which of the following algorithms is the best approach for solving Huffman codes? A) Exhaustive search **B) greedy algorithm** C) brute force algorithm D) divide and conquer algorithm	B
91	In Huffman coding, data in a tree always occur? A) roots **B) leaves** C) left sub trees D) right sub trees	B
92	Strassen’s Matrix multiplication is performed on which order of matrices? A) 3 X 3 B) 4 X 4 **C) 2 X 2** D) None of the above	C
93	Algorithm is a _____. A) Processing of problem B) **Step by Step method to solve a problem** C) Graphical method D) None of the above	B
94	Algorithm should have _____ or more output. A) Zero B) **One** C) Two D) Three	B
95	Big O(O) notation looks for_____ value. A)**Maximum**	A

	B)Minimum C) Average D) Mean	
96	A function which calls itself is called _____ function. A) Null B) Default C) **Recursive** D) Non Recursive	C
97	The running time of quick sort depends on the selection of: A) **Selection of pivot elements** B) Number of input C) Number of passes D) Arrangements of the elements	
98	Merge Sort divides the list in: A) N equal parts Incorrect B) **Two equal parts** C) Two parts, may not be equal D) N parts, may not be equal	B
99	Time complexity of matrix chain multiplication Select one: A) O(n2) B) O(n) C) O(nlogn) D) **O(n3)**	D
100	In dynamic programming, the output to stage n become the input to: A) Objective function B) Feasible solution C) **Decision stages** D) Optimum solution	C
101	Time complexity of LCS: A) O(m!) B) **O(mn)** C) O(n!) D) O(m/n)	B
102	The number of subtrees of a node is called as -------- of that node **a) Degree** b) Root c) Node None of the above	A
103	Specification of What are the valid inputs? & what are the acceptable outputs? For each valid input is called as _____. a) Function b) Instance **c) Problem** Algorithm	C
104	Node with Degree-0 is called as _____. a) Leaf Node b) Terminal Node **c) Both A or B** d) None of the above	C

105	Which of the following is/are the operation(s) on disjoint sets? a) MakeSet b) Union c) Find **D) All the above**	D
106	The formula for calculating MID in Binary Search is _____. a) MID = LOW + HIGH / 2 b) MID = LOW + (HIGH / 2) c) MID = HIGH + LOW / 2 d) **MID = (HIGH + LOW) / 2**	D
107	Like Merge Sort, Quick Sort does not need_____. a) PIVOT Element **b) An auxiliary array** c) PARTIONING d) All the above	B
108	How many solutions are there for 4 queens on 4*4 board? A) 1 **B) 2** C) 3 D) 4	B
109	In Topological Sort _____ is useD) a) Stack **b) Queue** c) DE-Queue LinkList	B
110	In CODE1, We consider that Machine-A has ____ number of registers. **a) 1** b) 2 c) 3 d) 4	A
111	In a binary search tree, which of the following traversals would print the numbers in the ascending order? A) Level-order traversal B) Pre-order traversal C) Post-order traversal **D) In-order traversal**	D
112	Consider the two matrices A and B which are of size 5 x 6 and 6 x 4 matrices respectively. What is the number of multiplications required to multiply the two matrices? A) 100 B) 110 **C) 120** D) 130	C
113	Topological sort can be implemented by? A) using Depth First Search B) using Breath First Search C) **Both DFS & BFS** D) None of the above	C
114	Time complexity of matrix chain multiplication Select one:	D

	A) O(n2) B) O(n) C) O(nlogn) D) **O(n3)**	
115	Longest common subsequence is an example of _____ A) Greedy algorithm **B) Dynamic programming** C) Traversing Algorithm D) Divide and conquer	B
116	Algorithm should may have __ input(s). **A) Zero** B) One C) Two D) Three	A
117	MAXMIN Algorithm divides the list in till the number of elements in the list are <= ____: A) 1 B) **2** C) 3 D) 4	B
118	To Sort the element in descending order using Heap Sort we should create_____ tree. a) MaxHeap **b) MinHeap** c) Heap d) None of the above	B
119	Longest common subsequence is an example of _____ A) Greedy algorithm **B) Dynamic programming** C) Traversing Algorithm D) Divide and conquer	B
120	_____ is a condition that is always true at a particular point in an algorithm. a. assertion b. constant c. exception **d. invariant**	D
121	_____ is a condition that is always true at a particular point in an algorithm. a. assertion b. constant c. exception **d. invariant**	D
122	Division Pattern of Problems in Divide and Conquer approach a. Iterative **b. Recursive** c. Parallel d. Random	B
123	Data Structure used for the Merge Sort	D

	a. Two Pointers b. Two pointers and N Extra Arrays c. 2N/2 pointers and N/2 Extra Arrays Incorrect **d. Two Pointers and an Extra Array**	
124	Descending priority queue can be implemented using _____ **a) max heap** b) min heap c) min-max heap d) trie	A
125	Consider a complete graph G with 4 vertices. The graph G has ..... spanning trees. a) 15 b) 8 **c) 16** d) 13	C
126	Which of the following is false? a) The spanning trees do not have any cycles b) The spanning trees do not have any cycles c) Edge e belonging to a cut of the graph if has the weight smaller than any other edge in the same cut, then the edge e is present in all the MSTs of the graph **d) Removing one edge from the spanning tree will not make the graph disconnected**	D
127	. In ……., a directed graph G is acylic if and only if a DFS of G yields no back edge. A) Graph transpose problem B) Strongly connected components problem **C) Topological sort problem** D) Euler path problem	C
128	. In …… input is a directed acyclic graph (DAG)G=(V,E). A) Graph transpose problem B) Strongly connected components problem **C) Topological sort problem** D) Euler path problem	C
129	Rather than build a subgraph one edge at a time ……. builds a tree one vertex at a time. A) kruskal's algorithm **B) prim's algorithm** C) dijkstra algorithm D) bellman ford algorithm	B
130	…… is known as a greedy algorithm, because it chooses at each step the cheapest edge to add to subgraph S. **A) Kruskal's algorithm** B) Prim's algorithm C) Dijkstra algorithm D) Bellman ford algorithm	A

131	. In preorder traversal of a binary tree the second step is _____ a) traverse the right subtree **b) traverse the left subtree** c) traverse right subtree and visit the root d) visit the root	B
132	An important application of binary tree is _____ **a) Huffman coding** b) stack implementation c) queue implementation d) traverse a cyclic graph	A
133	What is the minimum height for a binary search tree with 60 nodes? a) 1 b) 3 c) 4 **d) 2**	D
134	An immediate application of a Depth First Search traversal is _____ **a) count the number of leaf nodes** b) perform Inorder traversal in easy way c) count number of nodes d) implement preorder traversal	A

Subject Code	**CA 303**
Subject	**Automata Theory and computability**
Paper Code	**313251**

QUE. NO.	QUESTION	ANS
1.	Arden's theorem is true for: (A) More than one initial states (B) Null transitions (C) Non-null transitions (D) None of the mentioned	C
2.	What is the Regular Expression Matching Zero or More Specific Characters (A) x (B) # (C) * (D) &	C
3.	There are _____ tuples in finite state machine. (A) 4 (B) 5 (C) 6 (D) Unlimited	B
4.	P, O, R be regular expression over ∑, P is not ε, then R=Q + RP has a unique solution: (A) Q*P (B) QP* (C) Q*P* (D) (P*O*) *	B
5.	€-closure of state is combination of self-state and_____ (A) € reachable state (B) Initial State (C) Final State (D) All	A
6.	The following move of a PDA is on the basis of: (A) Present state (B) Input Symbol (C) Both (A) and (B) (D) None of the mentioned	C
7.	€-transitions are (A) Conditional (B) Unconditional (C) Input dependent (D) None of the mentioned	B
8.	Simplify the following regular expression: ε+1*(011) *(1*(011) *) * (A) (1+011) * (B) (1*(011) *) (C) (1+(011) *) * (D) (1011) *	A
9.	The value of n if turing machine is defined using n-tuples: (A) 6 (B) 7 (C) 8 (D) 5	B
10.	Which among the following are incorrect regular identities? (A) εR=R (B) ε*=ε (C) Φ*=ε (D) RΦ=R	D
11.	Which among the following is the format of unit production? (A) A->B (B) A->b (C) B->Aa (D) None of the mentioned	A
12.	Conversion of a DFA to an NFA (A) Is impossible (B) Requires the subset construction (C) Is Chancy (D) Is nondeterministic	B

13.	If L1 and L2 are context free languages, L1-L2 are context free: (A) Always (B) Sometimes (C) Never (D) None of the mentioned	C
14.	The class of recursively ennumerable language is known as: (A) Turing Class (B) Recursive Languages (C) Universal Languages (D) RE	D
15.	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 ∩ L2. The total number of states in M: (A) 6 (B) 4 (C) 2 (D) 8	B
16.	Which of the following a turing machine does not consist of? (A) Input tape (B) Head (C) State register (D) None of the mentioned	D
17.	Halting states are of two types. They are: (A) Accept and Reject (B) Reject and Allow (C) Start and Reject (D) None of the mentioned	A
18.	In the principle of mathematical induction, which of the following steps is mandatory? (A) Induction hypothesis (B) Inductive reference (C) Induction set assumption (D) Minimal set representation	A
19.	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 (D) All of the mentioned	D
20.	Which of the following is an application of Finite Automaton? (A) Compiler Design (B) Grammar Parsers (C) Text Search (D) All of the mentioned	D
21.	Which among the following is not a part of the Context free grammar tuple? (A) End symbol (B) Start symbol (C) Variable (D) Production	A
22.	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	A
23.	Given Grammar: S->A, A->aA, A->e, B->bA Which among the following productions are Useless productions? (A) S->A (B) A->aA (C) A->e (D) B->Ba	D
24.	Subset Construction method refers to: (A) Conversion of NFA to DFA (B) DFA minimization (C) Eliminating Null references (D) ε-NFA to NFA	A
25.	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	C

26.	A Language L may not be accepted by a Turing Machine if: (A) It it is recursively ennumerable (B) It is recursive (C) L can be ennumerated by some turing machine (D) None of the mentioned	B
27.	Which of the technique can be used to prove that a language is non regular? (A) Arden's theorem (B) Pumping Lemma (C) Ogden's Lemma (D) None of the mentioned	B
28.	The production Grammar is {S->aSbb, S->abb} is (A) Type-3 grammar (B) Type-2 grammar (C) Type-1 grammar (D) Type-0 grammar	B
29.	Which of the following properties does a simple graph not hold? (A) Must be connected (B) Must be unweighted (C) Must have no loops or multiple edges (D) Must have no multiple edges	A
30.	Which of the following option is correct? (A) NFA is slower to process and its representation uses more memory than DFA (B) DFA is faster to process and its representation uses less memory than NFA (C) NFA is slower to process and its representation uses less memory than DFA (D) DFA is slower to process and its representation uses less memory than NFA	C
31.	A pushdown automata can be defined as: (Q, ∑, G, q0, z0, A, d) What does the symbol z0 represents? (A) An element of G (B) Initial stack symbol (C) Top stack alphabet (D) All of the mentioned	D
32.	Let ∑={0,1}* and the grammar G be: S->ε S->SS S->0S1|1S0 State which of the following is true for the given (A) Language of all and only Balanced strings (B) It contains equal number of 0's and 1's (C) Ambiguous Grammar (D) All of the mentioned	D
33.	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	A
34.	Which of the following statement is true? (A)Every language that is defined by regular expression can also be defined by finite automata (B)Every language defined by finite automata can also be defined by regular expression (C)We can convert regular expressions into finite automata (D) All of the mentioned	D
35.	The number of edges from the root to the node is called _____ of the tree. (A) Height (B) Depth (C) Length (D) Width	B

36.	Let L denotes the language generated by the grammar S – OSO/00. Which of the following is true? (A) L = O (B) L is regular but not O (C) L is context free but not regular (D) L is not context free	B
37.	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	C
38.	Number of final state require to accept Φ in minimal finite automata. (A) 1 (B) 2 (C) 3 (D) None of the mentioned	D
39.	Let Z denote the set of all integers. Define f : Z —> Z by f(x) = {x / 2 (x is even) 0 (x is odd) then f is (A) Onto but not one-one (B) One-one but not onto (C) One-one and onto (D) Neither one-one nor-onto	A
40.	Given grammar: S->aA A->a A->B B-> A B->bb Which of the following is the production of B after simplification by removal of unit productions? (A) A (B) bb (C) aA (D) A| bb	B
41.	While applying Pumping lemma over a language, we consider a string w that belong to L and fragment it into _____ parts. (A) 2 (B) 5 (C) 3 (D) 6	C
42.	Which of the following is true? (A) (01)*0 = 0(10)* (B) (0+1)*0(0+1)*1(0+1) = (0+1)*01(0+1)* (C) (0+1)*01(0+1)*+1*0* = (0+1)* (D) All of the mentioned	D
43.	Push down automata accepts _____ languages. (A) Type 3 (B) Type 2 (C) Type 1 (D) Type 0	B
44.	Suppose A-> xBz and B-> y, then the simplified grammar would be: (A) A-> xyz (B) A-> xBz | xyz (C) A-> xBz |B |y (D) None of the mentioned	A
45.	Following context free grammar **S —> aB | bA** **A —>b | aS | bAA** **B —> b | bS | aBB** generates strings of terminals that have (A) Equal number of a's and b's (B) Odd number of a's and odd number b's (C) Even number of a's and even number of b's (D) Odd number of a's and even number of a's	A

46.	Which of the following CFG's can't be simulated by an FSM ? (A) S --> Sa | b (B) S --> aSb | ab (C) S --> abX, X --> cY, Y --> d | aX (D) None of these	B
47.	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	A
48.	Statement 1: A Finite automata can be represented graphically; Statement 2: The nodes can be its states; Statement 3: The edges or arcs can be used for transitions Hint: Nodes and Edges are for trees and forests too. Which of the following make the correct combination? (A) Statement 1 is false but Statement 2 and 3 are correct (B) Statement 1 and 2 are correct while 3 is wrong (C) None of the mentioned statements are correct (D) All of the mentioned	D
49.	Moore Machine is an application of: (A) Finite automata without input (B) Finite automata with output (C) Non- Finite automata with output (D) None of the mentioned	B
50.	Which of the following is a correct statement? (A) Moore machine has no accepting states (B) Mealy machine has accepting states (C) We can convert Mealy to Moore but not vice versa (D) All of the mentioned	A
51.	What is the output for the given language? Language: A set of strings over ∑= {a, b} is taken as input and it prints 1 as an output "for every occurrence of a, b as its substring. (INPUT: abaaab) (A 0010001 (B) 0101010 (C) 0111010 (D) 0010000	A
52.	Mealy and Moore machine can be categorized as (A) Inducers (B) Transducers (C) Turing Machines (D) Linearly Bounder Automata	B
53.	Which of the following strings is not generated by the following grammar? S → SaSbS|ε (A) aabb (B) abab (C) aababb (D) aaabbb	D
54.	Which among the following is not notated as infinite language? (A) Palindrome (B) Reverse (C) Factorial (D) L={ab}*	C
55.	A push down automaton employs _____ data structure. (A) Queue (B) Linked List (C) Hash Table (D) Stack	D
56.	Which one among the following is true? A mealy machine (A) produces a language (B) produces a grammar (C) can be converted to NFA (D) has less circuit delays	D

57.	A DFA cannot be represented in the following format (A) Transition graph (B) Transition Table (C) C code (D) None of the mentioned	D
58.	The productions **E—>E+E** **E—>E—E** **E-->E*E** **E —> E / E** **E —> id** (A) Generate an inherently ambiguous language (B) Generate an ambiguous language but not inherently so (C) Are unambiguous (D) Can generate all possible fixed length valid computation for carrying out addition, subtraction, multiplication and division, which can be expressed in one expression	C
59.	Context free languages are not closed under: (A) Intersection (B) Intersection with Regular Language (C) Complement (D) All of the mentioned	D
60.	Regular Expression denote precisely the _____ of Regular Language. (A) Class (B) Power Set (C) Super Set (D) None of the mentioned	A
61.	If ∑= {0,1}, then Φ* will result to: (A) ε (B) Φ (C) ∑ (D) None of the mentioned	A
62.	(a + b*c) most correctly represents: (A) (a +b) *c (B) (a)+((b)*.c) (C) (a + (b*)).c (D) a+ ((b*).c)	A
63.	A language is regular if and only if (A) Accepted by DFA (B) Accepted by PDA (C) Accepted by LBA (D) Accepted by Turing machine	A
64.	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	A
65.	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	B

66.	Which do not contain a substring 'rt' if ∑= {r, t} (A) (rt)* (B) (tr)* (C) (r*t*) (D) (t*r*)	D
67.	Which among the following is equivalent to the given regular expression? 01*+1 (A) (01)*+1 (B) 0((1)*+1) (C) (0(1)*)+1 (D) ((0*1)1*)*	C
68.	For S->0S1|e for ∑={0,1}*, which of the following is wrong for the language produced? (A) Non regular language (B) $0^n1^n \mid n>=0$ (C) $0^n1^n \mid n>=1$ (D) None of the mentioned	D
69.	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	C
70.	The transitional function of a DFA is (A) Q X Σ→Q (B) Q X Σ→2Q (C) Q X Σ→2n (D) Q X Σ→Qn	A
71.	If we have more than one accepting states or an accepting state with an outdegree, which of the following actions will be taken? (A) addition of new state (B) removal of a state (C) make the newly added state as final (D) more than one option is correct	D
72.	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	A
73.	P, Q, R are three languages, if P and R are regular and if PQ = R, then (A)Q has to be regular (B) Q cannot be regular (C) Q need not be regular (D) Q cannot be a CFL	C
74.	Regular expression {0,1} is equivalent to (A) 0 U 1 (B) 0 / 1 (C) 0 + 1 (D) All of the mentioned	D
75.	The number of final states we need as per the given language? Language L: {a^n| n is even or divisible by 3} (A)1 (B) 2 (C) 3 (D) 4	B

76.	(a+b)* is equivalent to (A) b*a* (B) (a*b*)* (C) a*b* (D) none of the mentioned	B
77.	A grammar G = (V, T, P, S) is _____ if every production taken one of the two forms: B->aC B->a (A) Ambiguous (B) Regular (C) Non Regular (D) None of the mentioned	B
78.	Which of the following the given language belongs to? L={$a^m b^m c^m$| m>=1} (A) Context free language (B) Regular language (C) Both (A) and (B) (D) None of the mentioned	D
79.	Consider following regular expression i) (a/b)* ii) (a*/b*)* iii) ((ϵ/a)b*)* Which of the following statements is correct (A) i,ii are equal and ii,iii are not (B) i,ii are equal and i,iii are not (C) ii,iii are equal and i,ii are not (D) all are equal	D
80.	Which of the production rule can be accepted by Chomsky grammar? (A) A->BC (B) A->a (C) S->e (D) All of the mentioned	D
81.	L and ~L are recursive enumerable then L is (A) Regular (B) Context free (C) Context sensitive (D) Recursive	D
82.	In Mealy Machine O/P is associated with (A)Present state (B) Next state (C) Input (D) None of the above	B
83.	Which of the following sets are null sets ? (A) {0} (B) ø (C) { } (D) Both (B) & (C)	D
84.	Can a DFA simulate NDFA (A)No (B) Yes (C) Sometimes (D) Depends on NDFA	B
85.	If we select a string w such that w∈L, and w=xyz. Which of the following portions cannot be an empty string? (A) x (B) y (C) z (D) all of the mentioned	B
86.	Which kind of proof is used to prove the regularity of a language? (A) Proof by contradiction (B) Direct proof (C) Proof by induction (D) None of the mentioned	A

87.	In Moore machine, output is produced over the change of: (A) Transitions (B) States (C) Both (D) None of the mentioned	B
88.	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 0^n1^n	D
89.	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	C
90.	The format: A->aB refers to which of the following? (A) Chomsky Normal Form (B) Greibach Normal Form (C) Backus Naur Form (D) None of the mentioned	B
91.	The language accepted by Push down Automaton: (A) Recursive Language (B) Context free language (C) Linearly Bounded language (D) All of the mentioned	B
92.	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	C
93.	Regular grammar is (A) Context free grammar (B) Non context free grammar (C) English grammar (D) None of the mentioned	A
94.	Which among the following is the correct option for the given grammar? G->X111|G1,X->X0|00 (A) $\{0^a1^b \mid a=2,b=3\}$ (B) $\{0^a1^b \mid a=1,b=5\}$ (C) $\{0^a1^b \mid a=b\}$ (D) More than one of the mentioned is correct	A
95.	The format: A->aB refers to which of the following? (A) Chomsky Normal Form (B) Greibach Normal Form (C) Backus Naur Form (D) None of the mentioned	B
96.	If L1 and L2 are context free languages, which of the following is context free? (A) L1* (B) L2UL1 (C) L1.L2 (D) All of the mentioned	D
97.	The Tuples for NDFA (A) Q, ∑,,δ,q0,F (B) Q,q0,F,δ (C) Θ,Q,q0,F,δ (D) F,Q,Δ,q0, δ	A

98.	Consider G=({S,A,B,E}, {a,b,c},P,S), where P consists of S →AB, A →a, B →b and E →c. Number of productions in P' after removal of useless symbols: (A) 4 (B) 3 (C) 2 (D) 5	B
99.	$L=\{0^i1^j2^k \mid j>i+k\}$ Which of the following satisfies the language? (A) 0111100 (B) 011100 (C) 0001100 (D) 0101010	A
100	If R = ((1, 1), (3, 1), (2, 3), (4, 2)), then which of the following represents R2, where R2 is R composite R? (A) ((1, 1), (3, 1), (2, 3), (4, 2)) (B) f(1, 1), (9, 1), (4, 9), (16, 4)) (C) 1(1, 3), (3, 3), (3, 4), (3, 2)) (D) ((1, 1), (2, 1), (4, 3), (3, 1))	D

CA 304 Artificial Intelligence MCQs

Sr.No.	Questions	Answer
1	What is Artificial intelligence? A. Putting your intelligence into Computer B. Programming with your own intelligence C. Making a Machine intelligent D. Playing a Game	C
2	Which of the following is not an application of AI? A. Intelligent Robots B. Handwriting Recognition C. Speech Recognition D. Content mining	D
3	Which of the following definitions correctly defines the State-space in an AI system? A. A state space can be defined as the collection of all the problem states B. A state space is a state which exists in environment which is in outer space C .A state space is the total space available for the agent in the state D. All of the above	A
4	A* algorithm is based on A. Breadth-First-Search B. Depth-First –Search C. Best-First-Search D. Hill climbing.	C
5	How do you represent “All dogs have tails”. A. ∀x: dog(x)->hastail(x) B. ∀x: dog(x)->hastail(y) C. ∀x: dog(y)->hastail(x) D. ∀x: dog(x)->has->tail(x)	A
6	Which search method takes less memory? A. Depth-First Search B. Breadth-First search C. Both (a) and (b) D. Optimal search	A
7	What is state space? A. The whole problem B. Your Definition to a problem C. Problem you design D. Representing your problem with variable and parameter a space where You know the solution.	D
8	Which is not a property of representation of knowledge? A. Representational Verification	A

	B. Representational Adequacy C. Inferential Adequacy D. Inferential Efficiency	
9	A production rule consists of A. A set of Rule B. A sequence of steps C. Both (a) and (b) D. Arbitrary representation to problem	C
10	Which of the following is also called First order Logic? A. Lower Order Calculus B. First Order Predicate Calculus C. Quantification Theory D. All of these	D
11	Single inference rule also called… A. Resolution B. Reference C. Reference D. None of these	A
12	Which of the following are the example of the intelligent agents… A. robot B. human C. Autonomous Spacecraft D. All of these	D
13	Important AI Techniques are A. Search B. Use of knowledge C. Abstraction D. All of the above	D
14	In Travel salesman problem, If there are N cities, then the number of different paths among them is …… A. 1.2….(N-1) or (N-1)!= N! B. (N-1)! C. N!-2 D. None of the above	A
15	Which search method takes less memory? A. Depth-First Search B. Breadth-First search C. Optimal search D. Linear Search	A
16	Treatment chosen by doctor for a patient for a disease is based on A. Only current symptoms B. Current symptoms plus some knowledge from the textbooks C. Current symptoms plus some knowledge from the textbooks plus experience D. All of the mentioned	C
17	Which is not Familiar Connectives in First Order Logic?	D

	A. and B. iff C. or D. not	
18	The truth values of traditional set theory is and that of fuzzy set is A. Either 0 or 1, between 0 & 1 B. Between 0 & 1, either 0 or 1 C. Between 0 & 1, between 0 & 1 D. Either 0 or 1, either 0 or 1	A
19	_____ is/are the way/s to represent uncertainty. A. Fuzzy Logic B. Probability C. Entropy D. All of the mentioned	D
20	What does the Bayesian network provides? A. Complete description of the domain B. Partial description of the domain C. Complete description of the problem D. None of the mentioned	A
21	What is the goal of artificial intelligence? A. To solve real-world problems B. To solve artificial problems C. To explain various sorts of intelligence D. To extract scientific causes	C
22	Which is true regarding BFS (Breadth First Search)? A. BFS will get trapped exploring a single path B. The entire tree so far been generated must be stored in BFS C. BFS is not guaranteed to find a solution if exists D. BFS is nothing but Binary First Search	B
23	What is the problem space of means-end analysis? A. An initial state and one or more goal states B. One or more initial states and one goal state C. One or more initial states and one or more goal state D. One initial state and one goal state	A
24	What is another type of default reasoning? A. Monotonic reasoning B. Analogical reasoning C. Bitonic reasoning D. Non-monotonic reasoning	D
25	The process of removing detail from a given state representation is called A Extraction B Abstraction C Information retrieval D Mining of data	B
26	A robot's "arm" is also known as its	C

	A End effector B Actuator C Manipulator D Servomechanism	
27	In default logic, which of the following inference rules of the form is allowed? A. (a : b) / c B. A / (b : c) C. A / b D. A / b : c	A
28	The room temperature is hot. Here the hot (use of linguistic variable is used) can be represented by A. Fuzzy Set B. Crisp Set C. Fuzzy & Crisp Set D. None of the mentioned	A
29	How many states are available in state-space search? A. 1 B. 2 C. 3 D. 4	D
30	A game can be formally defined as a kind of search problem with the following components. A. Initial State B. Successor Function C. Terminal Test D. All of the mentioned	D
31	What is a heuristic function? A. A function to solve mathematical problems B. A function which takes parameters of type string and returns an integer value C. A function whose return type is nothing D. A function that maps from problem state descriptions to measures of desirability	D
32	The “Turing machine” showed that you could use a/an system to program any algorithmic task. A. Binary B. Electro-chemical C. Recursive D. Semantic	A
33	What is transposition rule? A. From $p \rightarrow q$, infer $\sim q \rightarrow p$ B. From $p \rightarrow q$, infer $q \rightarrow \sim p$ C. From $p \rightarrow q$, infer $q \rightarrow p$ D. From $p \rightarrow q$, infer $\sim q \rightarrow \sim p$	D
34	Which action sequences are used to achieve the agent’s goal?	D

	A. Search B. Plan C. Retrieve D. Both search & plan	
35	The set of actions for a problem in a state space is formulated by a A. Intermediate states B. Initial state C. Successor function, which takes current action and returns next immediate state D. None of the mentioned	C
36	First order logic is also known as A. First order predicate calculus B. Quantification theory C. All of the mentioned D..None	C
37	A production rule consists of _____ A. A set of Rule B.A sequence of steps C. Set of Rule & sequence of steps D.Arbitrary representation to problem	C
38	What are Semantic Networks? A. A way of representing knowledge B. Data Structure C. Data Type D. None of the mentioned	A
39	Which is a refutation complete inference procedure for propositional logic? A. Clauses B. Variables C. Propositional resolution D. Proposition	C
40	Which algorithm are in more similar to backward chaining algorithm? A. Depth-first search algorithm B. Breadth-first search algorithm C. Hill-climbing search algorithm D. All of the mentioned	A
41	Which is also called single inference rule? A. Reference B. Resolution C. Reform D. None of the mentioned	B
42	Which of the following elements constitutes the frame structure? A. Facts or Data B. Procedures and default values C. Frame names D. Frame reference in hierarchy	A

43	What does the Bayesian network provides? A. Complete description of the domain B. Partial description of the domain C. Complete description of the problem D. None of the mentioned	A
44	Translate the following statement into First Order Logic. “For every a, if a is a PhD student, then a has a master degree” A. ∀ a PhD(a) -> Master(a) B. ∃ a PhD(a) -> Master(a) C. A is true, B is true D. A is false, B is false	A
45	Constraint satisfaction problems on finite domains are typically solved using a form of _____ A. Search Algorithms B. Heuristic Search Algorithms C. Greedy Search Algorithms D. All of the mentioned	D
46	Web Crawler is a/an _____ A. Intelligent goal-based agent B. Problem-solving agent C. Simple reflex agent D. Model based agent	A
47	What was originally called the “imitation game” by its creator? A. The Turing Test B. LISP C. The Logic Theorist D. Cybernetics	A
48	Which algorithm takes two sentences and returns a unifier? A. Inference B. Hill-climbing search C. Depth-first search D. Unify algorithm	D
49	What is the process of capturing the inference process as a single inference rule? A. Ponens B. Clauses C. Generalized Modus Ponens D. Variables	C
50	What is the heuristic function of greedy best-first search? A. f(n) != h(n) B. f(n) < h(n) C. f(n) = h(n) D. f(n) > h(n)	C
51	Which search is complete and optimal when h(n) is consistent? A. Best-first search B. Depth-first search	D

	C. Both Best-first & Depth-first search D. A* search	
52	Which of the following is the knowledge representation technique used to represent knowledge about stereotype situation? A. Semantic Network B. Frames C. Scripts D. Conceptual Dependency	C
53	Forward chaining systems are _____ where as backward chaining systems are _____ A. Goal-driven, goal-driven B. Goal-driven, data-driven C. Data-driven, goal-driven D. Data-driven, data-driven	C
54	_____ trees can be used to infer in Horn clause systems. A. Min/Max Tree B. And /Or Trees C. Minimum Spanning Trees D. Binary Search Trees	B
55	How many types of quantification are available in artificial intelligence? A.1 B.2 C.3 D.4	B
56	Which of the following is not the style of inference? A. Forward Chaining B. Backward Chaining C. Resolution refutation D. Modus Ponen	D
57	Which is the best way to go for Game playing problem? A. Linear approach B. Heuristic approach C. Random approach D. Optimal approach	B
58	Logic reasoning is the process of drawing conclusions from A. Symbolic Rules B. Inference Rules C. Logic Rules D. All of the mentioned	B
59	Which data structure conveniently used to implement BFS? A. Stacks B. Queues C. Priority Queues D. None of the Above	B
60	Which of the following are uninformed search technique/techniques?	D

	A. BFS B. DFS C. Bidirectional Search D. All of the above mentioned	
61	The goals of AI systems can be described in terms of cognitive tasks like A. Recognizing objects B. Answering questions C. Manipulating robotic devices D. All of the above	D
62	Blind searching is general term for A. Informed Search B. Uninformed Search C. Informed & Unformed Search D. Heuristic Search	B
63	Which data structure conveniently used to implement DFS? A. Stacks B. Queues C. Priority Queues D. All of the mentioned	A
64	Backtracking is based on, A. Last in first out B. First in first out C. Recursion D. Both Last in first out & Recursion	D
65	Which is the most straightforward approach for planning algorithm? A. Best-first search B. State-space search C. Depth-first search D. Hill-climbing search	B
66	Which of the following is not an application of AI? A. Intelligent Robots B. Handwriting Recognition C. Speech Recognition D. Content mining	D
67	Which is the first AI programming language? a) BASIC b) FORTRAN c) IPL(Inductive logic programming) d) LISP	D
68	What is the space complexity of Depth-first search? a) O(b) b) O(bl) c) O(m) d) O(bm)	D
69	Which search method will expand the node that is closest to the goal? a) Best-first search	B

	b) Greedy best-first search c) A* search d) None of the mentioned	
70	……. are means for transforming the problem from one state to another. A. States B. Operators C. Heuristic D. None of the above	B
71	One method of programming a computer to exhibit human intelligence is called modeling or A. Simulation B. Cognitization C. Duplication D. None	A
72	Computers normally solve problem by breaking them down into a series of yes-or-no decisions represented by 1s and 0s. What is the name of the logic that allows computers to assign numerical values that fail somewhere between 0 and 1? A. Human logic B. Fuzzy Logic C. Boolean Logic D. Operational Logic	B
73	Which particular generation of computers is associated with artificial intelligence? A. Second B. Fourth C. Fifth D. Third	C
74	…….. is called the father of AI. A. James C Gosling B. Dennis Ritchie C. Alan Turing D. Isaac Newton	C
75	We also use knowledge about what we know, called …….. A. Meta-Knowledge B. Performance Knowledge C. Standard knowledge D. Specific knowledge	A
76	The goals of AI systems can be described in terms of cognitive tasks like A. Recognizing objects B. Answering questions C. Manipulating robotic devices D. All of the above	D
77	Monotonic Reasoning is a process in which A. A reasoning process that moves in one direction only	D

	B. The conclusions derived are valid deductions and they remain so. C. The number of facts in the knowledge base is always increasing D. All of the mentioned	
78	The existing conclusions may be invalidated if we add some more information to our knowledge base. A. Monotonic Reasoning B. Common Sense Reasoning C. Non-monotonic Reasoning D. Heuristics	C
79	What among the following constitutes the representation of the knowledge in different forms? A. Relational method where each fact is set out systematically in columns B. Inheritable knowledge where relational knowledge is made up of objects C. Inferential knowledge D. All of the mentioned	D
80	A semantic network is used when one has knowledge that is best understood as a set of concepts that are related to one another. A. TRUE B. FALSE	A
81	Which of the following is not a part of fuzzy logic Systems Architecture A. Fuzzification Module B. Knowledge Base C. Defuzzification Module D. Interference base	D
82	Which of the following elements constitutes the frame structure? A. Facts or Data B. Procedures and default values C. Frame names D. Frame reference in hierarchy	A
83	Frames in artificial intelligence is derived from semantic nets. A. TRUE B. FALSE	A
84	Fuzzy Set theory defines fuzzy operators. Choose the fuzzy operators from the following. A. AND B. OR C. NOT D. All of the mentioned	D
85	What among the following is/are the best example of semantic networks? A. Wordnet B. Human Food Chain C. MYSIN D. Autonomous car driver	A
86	Fuzzy logic is usually represented as _____ A. IF-THEN-ELSE rules	B

	B. IF-THEN rules C. Both IF-THEN-ELSE rules & IF-THEN rules D. None of the mentioned	
87	_____ is/are the way/s to represent uncertainty. A. Fuzzy Logic B. Probability C. Entropy D. All of the mentioned	D
88	Fuzzy Computing A. doesn't deal with 2 valued logic B. mimics human behaviour C. deals with information which is vague, imprecise, uncertain, ambiguous, inexact, or probabilistic D. All of the above	D
89	The basic inference mechanism in semantic network in which knowledge is represented as Frames is to follow the links between the nodes. A. TRUE B. FALSE	A
90	A _____ is a probabilistic graphical model which represents a set of variables and their conditional dependencies using a directed acyclic graph A. Neural Network B. Bayesian Network C. Genetic Algorithm D. None of the mentioned	B
91	What are the limitations of the semantic networks? A. Intractability B. Lack in expressing some of the properties C. Incomplete D. Has memory constraints	B
92	The truth values of traditional set theory is _____ and that of fuzzy set is _____ A. Either 0 or 1, between 0 & 1 B. Between 0 & 1, either 0 or 1 C. Between 0 & 1, between 0 & 1 D. Either 0 or 1, either 0 or 1	A
93	Semantic Network represents _____ A. Syntactic relation between concepts B. Semantic relations between concepts C. All of the mentioned D. None of the mentioned	B
94	Which of the following is an extension of the semantic network? A. Expert Systems B. Rule Based Expert Systems C. Decision Tree Based networks D. Partitioned Networks	D

95	Which of the following statements correctly define knowledge representation in AI? A. It is the way in which facts and information are stored in the storage system of the agent B. It is the way in which we feed the knowledge in machine understandable form C. We modify the knowledge and convert it into the format which is acceptable by the machine D. All of the above	A
96	Which problem can frequently occur in backward chaining algorithm? A. Repeated states B. Incompleteness C. Complexity D. Both Repeated states & Incompleteness	D
97	What are the types of knowledge? A. Declarative Knowledge B. Procedural Knowledge C. Heuristic knowledge D. all of the above	D
98	What will happen if two literals are identical? A. Remains the same B. Added as three C. Reduced to one D. None of the mentioned	C
99	"Translate the following statement into FOL. “For every a, if a is a PhD student, then a has a master degree”" A. ∀ a PhD(a) -> Master(a) B. ∃ a PhD(a) -> Master(a) C. A is true, B is true D. A is false, B is false	A
100	A representation in which the control information necessary to use the knowledge is embedded in the knowledge itself A. Procedural Knowledge B. Declarative Knowledge C. Symbolic Knowledge D. All of the mentioned	A

Subject Code	**CA-305**
Subject	**Data Warehousing and Mining**
Paper Code	**315251**

QUE. NO.	QUESTION	ANS
1	**A data warehouse is which of the following?** A. Can be updated by end users. B. Contains numerous naming conventions and formats. C. Organized around important subject areas. D. Contains only current data.	C
2	**A star schema has what type of relationship between a dimension and fact table?** A. Many-to-many B. One-to-one C. One-to-many D. All of the above.	C
3	**Which of the following statement is true?** A. The data warehouse consists of data marts and operational data B. The data warehouse is used as a source for the operational data C. The operational data are used as a source for the data warehouse D. All of the above	C
4	**The following is true of three-tier data warehouses:** A. Once created, the data marts will keep on being updated from the data warehouse at periodic times B. Once created, the data marts will directly receive their new data from the operational databases C. The data marts are different groups of tables in the data warehouse D.A data mart becomes a data warehouse when it reaches a critical size	A

5	**The following technology is not well-suited for data mining:** A. Expert system technology B. Data visualization C. Technology limited to specific data types such as numeric data types D. Parallel architecture	C
6	**What is true of the multidimensional model?** A. It typically requires less disk storage B. It typically requires more disk storage C. Typical business queries requiring aggregate functions take more time D. Increasing the size of a dimension is difficult	B
7	**Which is the right approach of Data Mining?** A. Infrastructure, exploration, analysis, interpretation, exploitation B. Infrastructure, exploration, analysis, exploitation, interpretation C. Infrastructure, analysis, exploration, interpretation, exploitation D. Infrastructure, analysis, exploration, exploitation, interpretation	A
8	**Which of the following issue is considered before investing in Data Mining?** A. Functionality B. Vendor consideration C. Compatibility D. All of the above	D
9	**Cluster is?** A. Group of similar objects that differ significantly from other objects B. Operations on a database to transform or simplify data in order to prepare it for a machine-learning algorithm C. Symbolic representation of facts or ideas from which information can potentially be extracted D. None of these	A

10	**Black boxes are** A. This takes only two values. In general, these values will be 0 and 1 and they can be coded as one bit. B. The natural environment of a certain species C. Systems that can be used without knowledge of internal operations D. None of these	C
11	**A definition of a concept is if it recognizes all the instances of that concept** A. Complete B. Consistent C. Constant D. None of these	A
12	**Data mining is** A. The actual discovery phase of a knowledge discovery process B. The stage of selecting the right data for a KDD process C. A subject-oriented integrated time variant non-volatile collection of data in support of management D. None of these	A
13	**A definition or a concept is if it classifies any examples as coming within the concept** A. Complete B. Consistent C. Constant D. None of these	B
14	**Data independence means** A. Data is defined separately and not included in programs B. Programs are not dependent on the physical attributes of data. C. Programs are not dependent on the logical attributes of data D. Both (B) and (C).	D
15	**E-R model uses this symbol to represent weak entity set?** A. Dotted rectangle B. Diamond C. Doubly outlined rectangle D. None of these	C

16	**OLAP stands for** a) Online analytical processing b) Online analysis processing c) Online transaction processing d) Online aggregate processing	A
17	**Data that can be modeled as dimension attributes and measure attributes are called _____ data.** a) Multidimensional b) Single dimensional c) Measured d) Dimensional	A
18	**What do data warehouses support?** a) OLAP b) OLTP c) OLAP and OLTP d) Operational databases	A
19	**The full form of OLAP is** A) Online Analytical Processing B) Online Advanced Processing C) Online Advanced Preparation D) Online Analytical Performance	A
20	**Data can be store , retrive and updated in** … a) SMTOP b) OLTP c) FTP d) OLAP	B
21	**Which of the following is a good alternative to the star schema?** a) snow flake schema b) star schema c) star snow flake schema d) fact constellation	D
22	**——- is not a data mining functionality?** A) Clustering and Analysis B) Selection and interpretation C) Classification and regression D) Characterization and Discrimination	B

23	**Which of the following can also applied to other forms**? a) Data streams & Sequence data b) Networked data c) Text & Spatial data d) All of these	D
24	**What is noise?** a) component of a network b) context of KDD and data mining c) aspects of a data warehouse d) None of these	B
25	**Data mining is?** a) time variant non-volatile collection of data b) The actual discovery phase of a knowledge c) The stage of selecting the right data d) None of these	B
26	**_____ is a subject-oriented, integrated, time-variant, nonvolatile collection of data in support of management decisions.** A. Data Mining. B. Data Warehousing. C. Web Mining. D. Text Mining.	B
27	**The data Warehouse is_____.** A. read only. B. write only. C. read write only. D. none.	A
28	**Expansion for DSS in DW is_____.** A. Decision Support system. B. Decision Single System. C. Data Storable System. D. Data Support System.	A
29	**The important aspect of the data warehouse environment is that data found within the data Warehouse is_____.** A. subject-oriented. B. time-variant.	D

	C. integrated. D. All of the above.	
30	**The time horizon in Data warehouse is usually _____.** A. 1-2 years. B. 3-4years. C. 5-6 years. D. 5-10 years.	D
31	**The data is stored, retrieved & updated in _____.** A. OLAP. B. OLTP. C. SMTP. D. FTP.	B
32	**_____describes the data contained in the data warehouse.** A. Relational data. B. Operational data. C. Metadata. D. Informational data.	C
33	**_____predicts future trends & behaviors, allowing business managers to make proactive, knowledge-driven decisions**. A. Data warehouse. B. Data mining. C. Datamarts. D. Metadata.	B
34	**_____ is the heart of the warehouse.** A. Data mining database servers. B. Data warehouse database servers. C. Data mart database servers. D. Relational data base servers.	B
35	**_____ is the specialized data warehouse database.** A. Oracle. B. DBZ. C. Informix.	D

	D. Redbrick.	
36	**_____consists of information in the enterprise that is not in classical form.** A. Mushy metadata. B. Differential metadata. C. Data warehouse. D. Data mining.	A
37	**_____databases are owned by particular departments or business groups.** A. Informational. B. Operational. C. Both informational and operational. D. Flat.	B
38	**The star schema is composed of _____ fact table.** A. one. B. two. C. three. D. four.	A
39	**The time horizon in operational environment is _____.** A. 30-60 days. B. 60-90 days. C. 90-120 days. D. 120-150 days.	B
40	**The key used in operational environment may not have an element of_____.** A. time. B. cost. C. frequency. D. quality.	A

41	**Data can be updated in _____environment.** A. data warehouse. B. data mining. C. operational. D. informational.	C
42	**Record cannot be updated in _____.** A. OLTP B. files C. RDBMS D. data warehouse	D
43	**Data warehouse contains_____data that is never found in the operational environment.** A. normalized. B. informational. C. summary. D. denormalized.	C
44	**Data redundancy between the environments results in less than _____percent.** A. one. B. two. C. three. D. four.	A
45	**Detail data in single fact table is otherwise known as_____.** A. monoatomic data. B. diatomic data. C. atomic data. D. multiatomic data.	C

46	**A data warehouse is _____.** A. updated by end users. B. contains numerous naming conventions and formats C. organized around important subject areas. D. contains only current data.	C
47	**The load and index is _____.** A. a process to reject data from the data warehouse and to create the necessary indexes. B. a process to load the data in the data warehouse and to create the necessary indexes. C. a process to upgrade the quality of data after it is moved into a data warehouse. D. a process to upgrade the quality of data before it is moved into a data warehouse.	B
48	The type of relationship in star schema is _____. A. many-to-many. B. one-to-one. C. one-to-many. D. many-to-one.	C
49	**Fact tables are _____.** A. completely demoralized. B. partially demoralized. C. completely normalized. D. partially normalized.	C
50	**MDDB stands for _____.** A. multiple data doubling. B. multidimensional databases. C. multiple double dimension. D. multi-dimension doubling.	B

51	**Which of the following statement is true?** A. The data warehouse consists of data marts and operational data B. The data warehouse is used as a source for the operational data C. The operational data are used as a source for the data warehouse D. All of the above	C
52	**The following is true of three-tier data warehouses:** A. Once created, the data marts will keep on being updated from the data warehouse at periodic times B. Once created, the data marts will directly receive their new data from the operational databases C. The data marts are different groups of tables in the data warehouse D. A data mart becomes a data warehouse when it reaches a critical size	A
53	**What is true of the multidimensional model?** A. It typically requires less disk storage B. It typically requires more disk storage C. Typical business queries requiring aggregate functions take more time D. Increasing the size of a dimension is difficult	B
54	**Data warehouse architecture is based on _____.** A. DBMS. B. RDBMS. C. Sybase. D. SQL Server.	B
55	.**A goal of data mining includes which of the following?** A. To explain some observed event or condition B. To confirm that data exists C. To analyze data for expected relationships D. To create a new data warehouse	A

56	**Which of the following statements does not apply to relational databases?** A. Relational databases are simple to understand B. Tables are one of the basic components of relational databases C. Relational databases have a strong procedural orientation D. Relational databases have a strong mathematical foundation	C
57	**In the relational database terminology, a table is synonymous with:** A. A column B. A row C. An attribute D. A relation	D
58	**A null value indicates:** A. A numeric value with value 0 B. The absence of a value C. A very small value D. An erroneous value	B
59	**Which of the following features usually applies to data in a data warehouse?** A. Data are often deleted B. Most applications consist of transactions C .Data are rarely deleted D. Relatively few records are processed by applications	C
60	**Data warehouse architecture is based on _____.** A. DBMS. B. RDBMS. C. Sybase. D. SQL Server.	B

61	**The time horizon in Data warehouse is usually _____.** A. 1-2 years. B. 3-4years. C. 5-6 years. D. 5-10 years.	D
62	**The data is stored, retrieved & updated in _____.** A. OLAP. B. OLTP. C. SMTP. D. FTP.	B
63	**_____predicts future trends & behaviors, allowing business managers to make proactive, Knowledge-driven decisions.** A. Data warehouse. B. Data mining. C. Datamarts. D. Metadata.	B
64	**_____ is the heart of the warehouse.** A. Data mining database servers. B. Data warehouse database servers. C. Data mart database servers. D. Relational data base servers.	B
65	**_____ is the specialized data warehouse database.** A. Oracle. B. DBZ. C. Informix. D. Redbrick.	D
66	**_____defines the structure of the data held in operational databases and used by operational applications.** A. User-level metadata. B. Data warehouse metadata. C. Operational metadata. D. Data mining metadata	C
67	**_____maps the core warehouse metadata to business concepts, familiar and useful to end users.** A. Application level metadata. B. User level metadata. C. Enduser level metadata. D. Core level metadata.	A

68	**_____consists of information in the enterprise that is not in classical form.** A. Mushy metadata. B. Differential metadata. C. Data warehouse. D. Data mining	A
69	**The star schema is composed of _____ fact table.** A. one. B. two. C. three. D. four.	A
70	**The time horizon in operational environment is _____.** A. 30-60 days. B. 60-90 days. C. 90-120 days. D. 120-150 days.	B
71	**The key used in operational environment may not have an element of_____.** A. time. B. cost. C. frequency. D. quality.	A
72	**Data can be updated in _____environment.** A. data warehouse. B. data mining. C. operational. D. informational.	C
73	**Record cannot be updated in _____.** A. OLTP B. files C. RDBMS D. data warehouse	D
74	**The source of all data warehouse data is the_____.** A. operational environment. B. informal environment. C. formal environment. D. technology environment.	A

75	**Data redundancy between the environments results in less than _____percent.** A. one. B. two. C. three. D. four.	A
76	Fact tables are _____. A. completely demoralized. B. partially demoralized. C. completely normalized. D. partially normalized.	C
77	**_____ is the goal of data mining.** A. To explain some observed event or condition. B. To confirm that data exists. C. To analyze data for expected relationships. D. To create a new data warehouse.	A
78	**The data administration subsystem helps you perform all of the following, except_____.** A. backups and recovery. B. query optimization. C. security management. D. create, change, and delete information.	D
79	**The most common source of change data in refreshing a data warehouse is _____.** A. queryable change data. B. cooperative change data. C. logged change data. D. snapshot change data.	A
80	**Classification rules are extracted from _____.** A. root node. B. decision tree. C. siblings. D. branches.	B
81	**The main organizational justification for implementing a data warehouse is to provide _____.** A. cheaper ways of handling transportation. B. decision support. C. storing large volume of data. D. access to data.	C

82	**Data warehouse architecture is based on _____.** A. DBMS. B. RDBMS. C. Sybase. D. SQL Server	B
83	**Source data from the warehouse comes from _____.** A. ODS. B. TDS. C. MDDB. D. ORDBMS.	A
84	**_____ is a data transformation process.** A. Comparison. B. Projection. C. Selection. D. Filtering.	D
85	**The technology area associated with CRM is _____.** A. specialization. B. generalization. C. personalization. D. summarization.	C
86	**MDDB stands for _____.** A. multiple data doubling. B. multidimensional databases. C. multiple double dimension. D. multi-dimension doubling.	B
87	**_____ is an important functional component of the metadata.** A. Digital directory. B. Repository. C. Information directory. D. Data dictionary.	C
88	**_____ is data collected from natural systems.** A. MRI scan. B. ODS data. C. Statistical data. D. Historical data.	A

89	**_____ are some popular OLAP tools.** A. Metacube, Informix. B. Oracle Express, Essbase. C. HOLAP. D. MOLAP.	A
90	**Capability of data mining is to build _____ models.** A. retrospective. B. interrogative. C. predictive. D. imperative.	C
91	**Strategic value of data mining is _____.** A. cost-sensitive. B. work-sensitive. C. time-sensitive. D. technical-sensitive.	C
92	**The terms equality and roll up are associated with _____.** A. OLAP. B. visualization. C. data mart. D. decision tree.	C
93	**Exceptional reporting in data warehousing is otherwise called as _____.** A. exception. B. alerts. C. errors. D. bugs.	B
94	**_____ is a metadata repository.** A. Prism solution directory manager. B. CORBA. C. STUNT. D. COBWEB.	A
95	**_____ is an expensive process in building an expert system.** A. Analysis. B. Study. C. Design. D. Information collection.	D

96	**Removing duplicate records is a process called _____.** A. recovery. B. data cleaning. C. data cleansing. D. data pruning.	B
97	**How many components are there in a data warehouse?** A. two. B. three. C. four. D. five.	D
98	**Metadata contains atleast _____.** A. the structure of the data. B. the algorithms used for summarization. C. the mapping from the operational environment to the data warehouse. D. all of the above.	D
99	**Which of the following is the other name of Data mining?** A. Exploratory data analysis. B. Data driven discovery. C. Deductive learning. D. All of the above	D
100	**Which of the following is a descriptive model?** A. Classification. B. Regression. C. Sequence discovery. D. Association rules.	C

CA 301 Internet Computing - I (HTML,PHP and MYSQL) MCQs

Sr.No.	Questions	Answer
1	The attribute of form tag is A. Method B. Action C. Both A & B D. None of these	C
2	Which of these tags are all <table> tags? A. <table><head><tfoot> B. <table><tr><td> C. <table><tr><tt> D. <thead><body><tr>	B
3	Which is the correct CSS syntax? A. body:color=black B. {body;color:black} C. {body:color=black(body} D. body {color: black}	D
4	Which CSS property sets a background image for an element? A. background B. background - attachment C. background - color D. background - image	D
5	Which HTML tag is used to define an internal style sheet? A.<style> B.<css> C.<script> D. None	A
6	Where in an HTML document is the correct place to refer to an external style sheet? A. At the end of the document B. In the <head> section C. At the top of the document D. In the <body> section	B
7	How do you make a list that lists its items with squares? A. list-type: square B. type: square C. type: 2 D.list-style-type: square	D
8	<SCRIPT> … </SCRIPT> tag can be placed within _____ a. Header b. Body c. both A and B d. none of the above	C
9	Marquee is a tag in HTML to a. mark the list of items to maintain in queue	C

	b. Mark the text so that it is hidden in browser c. Display text with scrolling effect d. None of above	
10	In CSS what does “color:blue” can be called as A. Selector B. Declaration C. Rule D. Value	B
11	What should be the correct syntax to write a PHP code? A. < php > B < ? php ?> C. <? ?> D. <?php ?>	C
12	How should we add a single line comment in our PHP code? i) /? ii) // iii) # iv) /* */ A.Only ii) B.i), iii) and iv) C. ii), iii) and iv) D. Both ii) and iv)	C
13	What will be the output of the following PHP code? <?php $num = "1"; $num1 = "2"; print $num+$num1; ?> A. 3 B. 1+2 C. Error D. 12	A
14	PHP’s numerically indexed array begin with position _____ A. 1 B. 2 C. 0 D. -1	C
15	Which of the following PHP function will return true if a variable is an array or false if it is not an array? A. this_array() B. is_array() C. do_array() D. in_array()	B
16	Which one of the following PHP functions can be used to find files? A. glob() B. file()	A

	C. fold() D. get_file()	
17	Which of the following is used to get information sent via get method in PHP? A. $_GET B. $GET C. $GETREQUEST D.None of these	A
18	Which of the following method returns a formatted string representing a date? A. time() B. getdate() C. date() D. None of the above	C
19	Which of the following function returns the number of characters in a string variable? A. count($variable) B. len($variable) C. strcount($variable) D. strlen($variable)	D
20	Which variable is used to collect form data sent with both the GET and POST methods? A. $BOTH B. $_BOTH C. $REQUEST D. $_REQUEST	D
21	A cookie is created with which function. A.cookie() B.setcookie() C.cookieset() D.createcookie()	B
22	To destroy the session, use A.session_destroy() B.$destroy() C.#destroy() D.destroy_session()	A
23	The is a super global variable that returns the filename of the currently executing script. A.$_SERVER["PHP_SELF"] B.#_SERVER["SELF_PHP"] C.$_SERVER["SELF"] D.$_SERVER["PHP"]	A
24	Which of the following is not true? A.PHP can be used to develop web applications. B.PHP makes a website dynamic C.PHP applications can not be compile	D

	D.PHP can not be embedded into html.	
25	Which one of the following keyword is used in conjunction with an Exception object? A. throws B. exception C. throw D. final	C
26	Which is the Concatenation Operator in PHP? A. Dot (.) B. Plus (+) C. Ampersand (&) D. Percentage (%)	A
27	What does fopen() function do in PHP? A. It used to open folders in PHP B. It used to open files in PHP C. It used to open Remote Computer D. It used to open Remote Server	B
28	Which one of the following statements instantiates the mysqli class? A. $mysqli = new mysqli() B. $mysqli = new mysqli() C. $mysqli->new.mysqli() D. mysqli->new.mysqli()	B
29	Which one of the following methods is responsible for sending the query to the database? A. query() B. send_query() C. sendquery() D. query_send()	A

30	Which one of the following statement can be used to select the database?
	$mysqli=select_db('databasename');
	mysqli=select_db('databasename');
	mysqli->select_db('databasename');
	$mysqli->select_db('databasename');
		D

31	The updated mysql extension released with PHP 5 is typically referred to as A.MySQL B.mysql C.mysqli D.mysqly	C
32	PHP is a _____ language? A. user-side scripting B. client-side scripting C. server-side scripting D. Both B and C	C

33	Which statement will output $lfc on the screen? A. echo "$lfc"; B. echo "$$lfc"; C. echo "/$lfc"; D. echo "$lfc;";	A
34	PHP can create, open, read, write, delete, and close files on the server. A. True B. False C. PHP can only create, open and close files on the server D. PHP can read, write and delete files on the server	A
35	PHP can send and receive cookies? A. True B. False C. PHP older version can not send and receive cookies but new version can. D. PHP new version can not send and receive cookies but old version can	A
36	The PHP syntax is most similar to: A. VBScript B. JavaScript C. Perl and C D. All of the above	C
37	Which one is not a data type in PHP? A. Resources B. Objects C. Null D. Void	D
38	Which function returns an array consisting of associative key/value pairs? A. count() B. array_count() C. array_count_values() D. count_values()	C
39	As compared to associative arrays vector arrays are much A. Faster B. Slower C. Stable D. None of the above	A
40	What is the description of Error level E_ERROR? A. Fatal run-time error B. Near-fatal error C. Compile-time error D. Fatal Compile-time error	A
41	Which of the following is not a Built-in String functions in php?	D

	A. strlen() B. str_replace() C. strpos() D. strreverse()	
42	Which type of string can processes special characters inside quotes? A. single quote string B. double quote string C. Both A and B D. None of the above	B
43	What is the function file_get_contents() do? A. Read B. Save C. Delete D. Write	A
44	Arrow functions support the same features as ……. except that using variables from the parent scope is always automatic. A) Variable functions B) Static functions C) Anonymous functions D) Both A and C	C
45	Writing 2**3; will return the following result in PHP. A) 5 B) 6 C) 8 D) NAN	C
46	State Whether the following statements are True or False. i. Anonymous functions are also known as closures. ii. Closures can also be used as the value of variables iii. Closures can not inherit variables from the parent scope. A) i-True, ii-False, iii-False B) i-True, ii-True, iii-True C) i-True, ii-False, iii-True D) i-True, ii-True, iii-False	
47	Which of the following is not PHP Loops? A. while B. do while C. for D. do for	D
48	In PHP Language variables are case sensitive A. True B. False C. Depends on website D. Depends on server	A
49	Data for a cookie stored in _____ in PHP? A. In ISP Computer B. In User's Computer	B

	C. In Server Computer D. It depends on PHP Coding	
50	How PHP files can be accessed? A. Through Web Browser B. Through HTML files C. Through Web Server D. All of Above	C
51	In php string data are A. delimited by single quote B. delimited by double quote C. delimited by <<< identifier D. All of above	D
52	Which function includes the specified file even the statement evaluates to false in which block the function is placed. A. include () B. require () C. both of above D. None of above	B
53	Casting operator introduced in PHP 6 is A. (array) B. (int64) C. (real) or (double) or (float) D. (object)	B
54	Which datatypes are treaded as arrays A. Integer B. Float C. String D. Booleans	C
55	When defining identifier in PHP you should remember that A. Identifier are case sensitive. So $result is different than $ result B. Identifiers can be any length C. Both of above D. None of above	C
56	Which of folowiing variable assignment is 'by value' assignment in PHP A. $value1= $value? B. $value1= & $value? C. $value1= & $value? D. None	A
57	Identify the variable scope that is not supported by PHP A. Local variables B. Function parameters C. Hidden variables D. Global variables	C

58	The output of ofllowing script would be
	$somerar=15;
	function ad it () {
	GLOBAL $somevar;
	$somerar++ ;
	echo "somerar is $somerar";
	}
	addit ();
	A. somerar is 15
	B. somerar is 16
	C. somerar is 1
	D. somerar is $ somerar
		B

59	The left association operator % is used in PHP for A. percentage B. bitwise or C. division D. modulus	D
60	Trace the function that does continue the script execution even if the file inclusion fails A. include () B. require () C. both of above D. None of above	A
61	Which one of the following statements can be used to select the database? A.$mysqli=select_db('databasename'); B. mysqli=select_db('databasename'); C. mysqli->select_db('databasename'); D. $mysqli->select_db('databasename');	D
62	Which one of the following function is capable of reading a specific number of characters from a file? A. fgets() B. fget() C. fileget() D. filegets()	A
63	Which one of the following function outputs the contents of a string variable to the specified resource? A. filewrite() B. fwrite() C. filewrites() D. fwrites()	B
64	Which one of the following function reads a directory into an Array? A. scandir() B. readdir()	A

	C. scandirectory() D. readdirectory()	
65	Which function is used to erase all session variables stored in the current session? A. session_destroy() B. session_change() C. session_remove() D. session_unset()	D
66	What is the return type of session_set_save_handler() function? A. boolean B. integer C. float D. character	A
67	Which one of the following functions will convert a string to all uppercase? A. strtoupper() B. uppercase() C. str_uppercase() D. struppercase()	A
68	When you use the $_GET variable to collect data, the data is visible to _____ A. none B. only you C. everyone D. selected few	C
69	Which one of the following functions can be used to concatenate array elements to form a single delimited string? A. explode() B. implode() C. concat() D. concatenate()	B
70	Which variable is used to collect form data sent with both the GET and POST methods? A. $BOTH B. $_BOTH C. $REQUEST D. $_REQUEST	D
71	To validate an email address, which flag is to be passed to the function filter_var()? A. FILTER_VALIDATE_EMAIL B. FILTER_VALIDATE_MAIL C. VALIDATE_EMAIL D. VALIDATE_MAIL	A
72	Which two predefined variables are used to retrieve information from forms? A. $GET & $SET	B

	B. $_GET & $_SET C. $__GET & $__SET D. GET & SET	
73	Which one of the following is the default PHP session name? A. PHPSESSID B. PHPSESID C. PHPSESSIONID D. PHPIDSESS	A
74	What is the default time(in seconds) for which session data is considered valid? A. 1800 B. 3600 C. 1440 D. 1540	C
75	Which directive determines whether PHP scripts on the server can accept file uploads? A. file_uploads B. file_upload C. file_input D. file_intake	A
76	Which function is used to verify whether a variable contains a value? A. header() B. footer() C. inset() D. isset()	D
77	Which function is used to split a string into a series of substrings, with each string boundary is determined by a specific separator? A. break() B. divide() C. explode() D. md5()	C
78	Which is the most powerful authentication method among the four? A. Hard-coding a login pair directly into the script B. File-based authentication C. Data-based authentication D. PEAR'S HTTP authentication	C
79	Which statement will output $x on the screen? A. echo "\$x"; B. echo "$$x"; C. echo "/$x"; D. echo "$x;";	A
80	Which of the below statements is equivalent to $add += $add? A. $add = $add B. $add = $add +$add C. $add = $add + 1 D. $add = $add + $add + 1	B
81	Which of the following PHP functions accepts any number of parameters? A. func_get_argv()	B

	B. func_get_args() C. get_argv() D. get_argc()	
82	When you're uploading files you need to set the enctype of the form to _____ A. text B. text/file C. multipart/form-data D. multimedia/form-data	C
83	To check whether a file was uploaded, you look in the _____ superglobal array. A. $_FILES B. $_DOCS C. $_DOCUMENTS D. $_FOLDERS	A
84	Which function do you have to use to check whether the $path you've stored exists? A. path_dir() B. path() C. is_dir() D. path_dir()	C
85	Before you can start processing images with PHP, you must first add the ability to upload images to your administrative form on _____ A. .htaccess B. function.inc.php C. index.php D. admin.php	D
86	What will be the output of the following PHP code? <?php $color1 = "1"; $color2 = "1"; echo "$color1" + "$color2"; ?> A.11 B. 2 C. 0 D. 1	B
87	What will be the output of the following PHP code? <?php $color1 = "red"; $color2 = "1"; $color3 = "grey" echo "$color1" + "$color2" . "$color3"; ?> A.1grey B. grey	A

	C. 0 D. red1grey	
88	What will be the output of the following PHP code? **<?**php $color = red; echo "$color" . red ; **?>** A. red red B. red C. error D. nothing	C

89	What will be the output of the following PHP code?
	<?php
	for ($count = 1; $count != 20;$count++)
	{
	print $count;
	$count++;
	}
	?>
	A.Infinite
	B.123…….20
	C.1357…19
	D. 13579…21
		A

90	What will be the output of the following PHP code? **<?**php define("GREETING", "PHP is a scripting language"); echo $GREETING; **?>** A. $GREETING B. no output C. PHP is a scripting language D. GREETING	B

91	What will be the output of the following PHP code?
	<?php
	while()
	{
	print "hi";
	}
	?>
	A. infinite loop
	B. hi
	C. no output
	D. error
		D

92	In PHP in order to access MySQL database you will use: A. mysqlconnect() function B. mysql-connect() function	C

	C. mysql_connect() function D. sql_connect() function	
93	The getdate() function returns A. An integer B. A floating-point number C. An array D. A string	C
94	What elements will the following script output? <?php $array = array (true => 'a', 1 => 'b'); var_dump ($array); ?> A. 1 => 'b' B. True => 'a', 1 => 'b' C. 0 => 'a', 1 => 'b' D. It will output NULL	D
95	Sessions allow you to A. store persistent user preference on a site B. save user authentication information from page to page C. create multipage forms D. all of above	D
96	Which of the following is not valid PHP code? A. $_10 B. ${“MyVar”} C. &$something D. $10_somethings	D
97	Which of the following is correct print statement? A. print " PHP is Fun! "; B. print "PHP is Fun! "; C. print "PHP ", "is ", "Fun!"; D. All of the above	D
98	PHP variables are case-sensitive? A. True B. False C. For "sum" variable it is case-sensitive D. None of the above	A
99	Why Exception Handling in PHP used? A. Separation of error handling code from normal code B. Grouping of error types C. Both A And B D. None of the above	C
100	foreach loop is used to iterate over ____? A. number B. object C. function D. array	D