Ph.D. Entrance Exam 2022

Course	Ph.D.
Branch	CSE
Subject Name	CSE

SN	Question Text	Option 1	Option 2	Option 3	Option 4
1	Merge sort uses which of the following technique to implement sorting?	backtracking	greedy algorithm	divide and conquer	dynamic programming
2	What is the main function of the command interpreter?	to provide the interface between the API and application program	to handle the files in the operating system	to get and execute the next user-specified command	none of the mentioned
3	In simple uniform hashing, what is the search complexity?	O(n)	O(logn)	O(nlogn)	O(1)
4	In CISC architecture most of the complex instructions are stored in _____	CMOS	Register	Transistors	Diodes
5	Given an input arr = {2,5,7,99,899}; key = 899; What is the level of recursion?	5	2	3	4
6	If a process fails, most operating system write the error information to a _____	new file	another running process	log file	none of the mentioned
7	Who is the father of Software Engineering?	Margaret Hamilton	Watts S. Humphrey	Alan Turing	Boris Beizer
8	Who proposed the spiral model?	Barry Boehm	Pressman	Royce	IBM
9	When a process is in a "Blocked" state waiting for some I/O service. When the service is completed, it goes to the _____	Terminated state	Suspended state	Running state	Ready state
10	Which of the following is the correct way to declare a multidimensional array in Java?	int[] arr;	int arr[[]];	int[][]arr;	int[[]] arr;
11	If link transmits 4000frames per second, and each slot has 8 bits, the transmission rate of circuit this TDM is _____	32kbps	500bps	500kbps	32bps
12	What is the worst case time complexity of merge sort?	O(n log n)	O(n2)	O(n2 log n)	O(n log n2)
13	What are agile manifesto principles?	Customer satisfaction	Face-to-face communication within a development team	Changes in requirements are welcome	All of the mentioned
14	What is the word length of an 8-bit microprocessor?	8-bits – 64 bits	4-bits – 32 bits	8-bits – 16 bits	8-bits – 32 bits
15	The tuples of the relations can be of _____ order.	Any	Same	Sorted	Constant
16	How to access data members of a class?	Dot, arrow or direct call	Dot operator	Arrow operator	Dot or arrow as required
17	Which of the following is used to denote the selection operation in relational algebra?	Pi	Sigma	Lambda	Omega

#	Question	Option A	Option B	Option C	Option D
18	The total space for the data memory available in the AVR-based microcontroller is?	FFFH	FH	FFFFH	FFFFFFFH
19	A memory connected to a microprocessor has 20 address lines and 16 data lines. What will be the memory capacity?	8 KB	2 MB	16 MB	64 KB
20	Which among the following is true?	This pointer can be used to guard against any kind of reference	This pointer can be used to guard against self-reference	This pointer can be used to guard from other pointers	This pointer can be used to guard from parameter referencing
21	If all the classes use private inheritance in multilevel inheritance then ___	It will not be called multilevel inheritance	Each class can access only non-private members of its parent	Each subsequent class can access all members of previous level parent classes	None of the members will be available to any other class
22	echo command is used for ___	displaying diagnostic messages	displaying date and time	displaying errors	displaying operating system details
23	The result of sizeof() function ___	Includes space reserved for this pointer	Includes space taken up by the address pointer by this pointer	Doesn't include the space taken by this pointer	Doesn't include space for any data member
24	Which Unix command is used for locating repeated and non-repeated lines?	cut	uniq	paste	sort
25	Which of the following act violates cyber security?	Exploit	Attack	Threat	Vulnerability
26	Which of the following systems use RDMS?	Oracle	Microsoft SQLServer	IBM	All of the mentioned
27	Who is responsible for the creation of the symbol table?	Assembler	Compiler	Interpreter	All of the mentioned
28	Which of the following phase of the compiler is Syntax Analysis?	Second	Third	First	All of the mentioned
29	What is CFG?	Regular Expression	Compiler	Language expression	All of the mentioned
30	Which of the following does an address code involve?	No unary operators	Exactly 3 address	At most Three address	None of the mentioned
31	A regular language over an alphabet $\sum$ is one that cannot be obtained from the basic languages using the operation	Union	Concatenation	Kleene*	All of the mentioned
32	Which of the following is not a part of 5-tuple finite automata?	Input alphabet	Transition function	Initial State	Output Alphabet
33	For a give Moore Machine, Given Input='101010', thus the output would be of length:	|Input|+1	|Input|	|Input-1|	Cannot be predicted
34	Which of the following is a correct statement?	Moore machine has no accepting states	Mealy machine has accepting states	We can convert Mealy to Moore but not vice versa	All of the mentioned
35	Mealy and Moore machine can be categorized as:	Inducers	Transducers	Turing Machines	Linearly Bounder Automata
36	When are 2 finite states equivalent?	Same number of transitions	Same number of states	Same number of states as well as transitions	Both are final states
37	Let $\sum$= {a, b, …. z} and A = {Hello, World}, B= {Input, Output}, then (A*∩B) U (B*∩A) can be represented as:	{Hello, World, Input, Output, ε}	{Hello, World, ε}	{Input, Output, ε}	{}
38	Given: L= {xε$\sum$= {0,1} |x=0n1n for n>=1}; Can there be a DFA possible for the language?	Yes	No	can't say	None of the above
39	Extended transition function is .	Q * Σ* -> Q	Q * Σ -> Q	Q* * Σ* -> Σ	Q * Σ -> Σ
40	String X is accepted by finite automata if .	δ*(q,x) E A	δ(q,x) E A	δ*(Q0,x) E A	δ(Q0,x) E A
41	Regular expression for all strings starts with ab and ends with bba is.	aba*b*bba	ab(ab)*bba	ab(a+b)*bba	All of the mentioned
42	Which of the following is not a type of Artificial Intelligence agent?	Learning AI agent	Goal-based AI agent	Simple reflex AI agent	Unity-based AI agent

43	___ number of informed search method are there in Artificial Intelligence.	4	3	2	1
44	Which of the following is/are the composition for AI agents?	Program only	Architecture only	Both Program and Architecture	None of the mentioned
45	Which of the following is not a sensor in IoT?	BMP280	DHT11	hotoresistor	LED
46	How many number of elements in the Open IoT Architecture?	3 elements	7 elements	8 elements	6 elements
47	Which of the following protocol is used to link all the devices in the IoT?	HTTP	UDP	Network	TCP/IP
48	Which of the following is statistical boosting based on additive logistic regression?	gamBoost	gbm	ada	mboost
49	Which of the following expression is true?	In sample error < out sample error	In sample error > out sample error	In sample error = out sample error	All of the mentioned
50	Which of the following is defined as the process of elimination of parts of a scene outside a window or a viewport?	editing	cutting	plucking	clipping