Examination: **M.Tech. Network and Internet Engineering**

Section 1 - Section 1

Question No.1 4.00

Bookmark

Consider a hypothetical processor with an instruction of type LW R1, 20(R2), which during execution reads a 32-bit word from memory and stores it in a 32-bit register R1. The effective address of the memory location is obtained by the addition of a constant 20 and the contents of register R2. Which of the following best reflects the addressing mode implemented by this instruction for operand in memory?

- Immediate Addressing
- Register Addressing
- Base Indexed Addressing
- Register Indirect Scaled Addressing

Question No.2 4.00

Bookmark

The _____ clause is used to list the attributes desired in the result of a query.

- Distinct
- From
- Where
- Select

Question No.3 4.00

Bookmark

One day, Ravi walked a distance of 75 metres towards the north. Then he turned left and walked for about 25 metres, he turned left again and walked 80 metres. Finally, he turned to the right at an angle of 45º. In which direction was he moving finally?

- North-east
- South-west
- South-east
- North-west

Question No.4 4.00

Bookmark

Which is not Familiar Connectives in First Order Logic?

- and
- or
- iff
- not

Question No.5 4.00

Bookmark

Which of the following concurrency control protocols ensure both conflict serializability and freedom from deadlock?
I. 2-phase locking
II. Time-stamp ordering

- Neither I nor II
- Both I and II
- II only
- I only

Question No.6 4.00

Bookmark

The phenomenon of having a continuous glow of a beam on the screen even after it is removed is called as

- incandescence
- phosphorescence
- fluorescence
- persistence

Question No.7 4.00

Bookmark

In a rule based system, procedural domain knowledge is in the form of_____.

- Meta rules
- Control rules
- Rule interpreters
- Production rules

Question No.8 4.00

Bookmark

The inorder and preorder traversal of a binary tree are **d b e a f c g** and **a b d e c f g**, respectively.
The postorder traversal of the binary tree is:

- d e f g b c a
- d e b f g c a
- e d b g f c a
- e d b f g c a

Question No.9 4.00

Bookmark

We use dynamic programming approach when

- It's faster than Greedy approach
- It provides optimal solution
- The solution has optimal substructure
- The given problem can be reduced to the 3-SAT problem

Question No.10 4.00

Bookmark

All the following hidden surface algorithms employ image space approach except

- scan line method
- depth buffer method
- depth sort method
- Backface removal

Question No.11 4.00

Bookmark

Some code optimizations are carried out on the intermediate code because

- The information from the front end cannot otherwise be used for optimization
- the information from dataflow analysis cannot otherwise be used for optimization
- They enhance the portability of the compiler to other target processors
- program analysis is more accurate on intermediate code than on machine code

Question No.12 4.00

Bookmark

Page fault occurs

- When a requested page is in memory
- When an exception is thrown
- When a page is corrupted
- When a requested page is not in memory

Question No.13 4.00

Bookmark

Tables in second normal form (2NF):

- Eliminate all hidden dependencies
- Eliminate the possibility of a insertion anomalies
- Have all non key fields that depend on the whole primary key
- Have a composite key

Question No.14 4.00

Bookmark

What will happen when defining the enumerated type?

- It will not allocate memory to its variables
- It will allocate memory at run time
- It will allocate memory
- It will not allocate memory

Question No.15 4.00

Bookmark

The finding of a path from start state to goal state is known as

- Simulation
- Classification
- Search
- Planning

Question No.16 4.00

Bookmark

Study the following information carefully and answer the question below it

Lakshman passes through seven lanes to reach his school. He finds that 'Truth lane' is between his house and 'Lie lane'. The third lane from his school is 'Karma lane'. 'Dharma lane' is immediately before the 'Yog lane'. He passes 'Salvation lane' at the end, 'Lie lane' is between 'Truth lane' and 'Dharma lane', the sixth lane from his house is 'Devotion lane'.

How many lanes are there between 'Lie lane' and 'Devotion lane'?

- three
- five
- two
- four

Question No.17 4.00

Bookmark

The output of lexical analyser is

- A set of RE
- Syntax Tree
- Set of Tokens
- String Character

Question No.18 4.00

Bookmark

The process of digitizing a given picture definition into a set of pixel-intensity for storage in the frame buffer is called

- Rasterization
- Scan conversion
- True color system
- Encoding

Question No.19 4.00

Bookmark

Consider the CFG with {S,A,B) as the non-terminal alphabet, {a,b) as the terminal alphabet, S as the start symbol and the following set of production rules
S -->aB S -->bA
B --> b A --> a
B -->bS A -->aS
B -->aBB A -->bAA
Which of the following strings is generated by the grammar?how many derivation trees are there?

- aaaabb,2
- aabbbb,1
- aabbab,2
- aabbbab,1

Question No.20 4.00

Bookmark

The time taken to switch between user and kernel modes of execution be t1 while the time taken to switch between two processes be t2. Which of the following is TRUE?

- nothing can be said about the relation between t1 and t2.
- t1 = t2
- t1 < t2
- t1 > t2

Question No.21 4.00

Bookmark

Choose the antonym of the italicized word.
The habit of *squandering* money should not be encouraged.

- hoarding
- collecting
- saving
- discarding

Question No.22 4.00

Bookmark

How do you represent “All dogs have tails”

- $\forall x$: dog(x)→ hastail(y)
- $\forall x$: **dog(x)→ hastail(x)**
- $\forall x$: dog(x)→ hasàtail(x)
- $\forall x$: dog(y)→ hastail(x)

Question No.23 4.00

Bookmark

In the context of modular software design, which one of the following combinations is desirable?

- Low cohesion and high coupling
- High cohesion and high coupling
- High cohesion and low coupling
- Low cohesion and low coupling

Question No.24 4.00

Bookmark

Choose the correct meaning of the italicized idiom.
Raju has a very nice manner, but you would better take what he says *with a grain of salt.*

- To criticize
- To talk sensibly
- To listen to something with considerable doubt
- To complement

Question No.25 4.00

Bookmark

In the absolute addressing mode

- The operand is inside the instruction
- The register containing address of the operand is specified inside the instruction
- The location of the operand is implicit
- The address of the operand is inside the instruction

Question No.26 4.00

Bookmark

What kind of approach was introduced for elicitation and modelling to give a functional view of the system?

- Use Cases (by Jacobson)
- Object Modeling Technique (by Rambaugh)
- Object Oriented Design (by Booch)
- Fusion (by Coleman)

Question No.27 4.00

Bookmark

Based on the information given answer the following question.
1. In a family of six persons, there are people from three generations. Each has separate professions and they like different colours. There are two couples.
2. Shyam is an Engineer and his wife is not a doctor and she does not like Red colour.
3. Chartered Accountant likes green colour and his wife is a teacher.
4. Manisha is the mother-in-law of Sunita and she likes orange colour.
5. Vimal is the grand father of Tarun and tarun is the Principal and likes black colour.
6. Nyna is the grand daughter of Manisha and she likes blue colour. Nyna's Mother likes white colour.

Who is the Chartered Accountant?

- Manisha
- Vimal
- Nyna
- None of these

Question No.28 4.00

Bookmark

Graph Colouring is the _____type of algorithm design strategy

- Dynamic Programming
- Greedy
- Backtracking
- Branch and Bound

Question No.29 4.00

Bookmark

Storage mapping is done by

- Linker
- Operating system
- Compiler
- Loader

Question No.30 4.00

Bookmark

Which is more suitable normal form to be used with definite clause?

- Generalized modus ponens
- Positive literal
- Negative literal
- Neutral literal

Question No.31 4.00

Bookmark

Checking quality of software in both simulated and live environments is known as

- Checking
- Validation
- Usability
- Verification

Question No.32 4.00

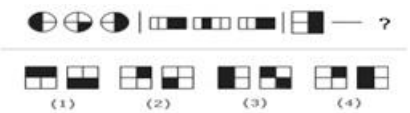
Bookmark

_____search is not optimal with respect to space complexity.

- Depth first search
- Iterative Deepening Search
- Breadth first search
- Best first search

Question No.33 4.00

Bookmark



- 1
- 3
- 4
- 2

Question No.34 4.00

Bookmark

It is important to realize that the ties that bind us together in common activity are so _____ that they can disappear at any moment.

- tenacious
- tenuous
- restrictive
- tentative

Question No.35 4.00

Bookmark

The amount of ROM needed to implement a 4 bit multiplier is

- 64 bits
- 1 Kbits
- 2 Kbits
- 128 bits

Question No.36 4.00

Bookmark

From which tag descriptive list starts?

- <DS>
- <DL>
- <DD>
- <LL>

Question No.37 4.00

Bookmark

The kind of lists best to answer “The item at position n” is,

- List implemented using Array
- Circular linked list
- Doubly linked lists
- Singly linked list

Question No.38 4.00

Bookmark

Find the odd item

- Opera
- Edge
- Chrome
- Java

Question No.39 4.00

Bookmark

How many undirected graphs (not necessarily connected) can be constructed out of a given set V= $\{V_1, V_2, \ldots V_n\}$ of n vertices ?

- n!
- n(n-l)/2
- 2^n
- 2^(n(n-1)/2)

Question No.40 4.00

Bookmark

Which one of the following task is not done by data link layer?

- Framing
- Flow control
- Channel coding
- Error control

Question No.41 4.00

Bookmark

Study the following information carefully and answer the question below it:

P, Q, R, S T went on a picnic. P is son of Q but Q is not the father of P. R is the son of S, who is the brother of P. T is the wife of S.

How many males are present in the group?

- 3
- 2
- 4
- 1

Question No.42 4.00

Bookmark

The interemediate code in .NET framework is called as

- Byte Code
- Soft Code
- MSIL
- None of the these

Question No.43 4.00

Bookmark

Which of the following is NOT true of deadlock prevention and deadlock avoidance schemes?

- In deadlock prevention, the request for resources is always granted if the resulting state is safe
- Deadlock avoidance requires knowledge of resource requirements a priori
- Deadlock avoidance is less restrictive than deadlock prevention
- In deadlock avoidance, the request for resources is always granted if the result state is safe

Question No.44 4.00

Bookmark

A grammar for a programming language is a formal description of

- Structure
- Syntax
- Semantics
- Library

Question No.45 4.00

Bookmark

What is the maximum number of reduce moves that can be taken by a bottom-up parser for a grammar with no epsilon- and unit-production to parse a string with n tokens?

- n/2
- 2^n
- 2n-1
- n-1

Question No.46 4.00

Bookmark

Choose the correct meaning of the italicized idiom.
When Peter left he was extremely disappointed. I think he has *gone for good.*

- To a foreign country
- To a good place
- Permanently
- To seek good fortune

Question No.47 4.00

Bookmark

If one uses straight two-way merge sort algorithm to sort the following elements in ascending order 20, 47, 15, 8, 9, 4, 40, 30, 12, 17 then the order of these elements after the second pass of the algorithm is:

- 15, 20, 47, 4, 8, 9, 12, 30, 40, 17
- 8, 9, 15, 20, 47, 4, 12, 17, 30, 40
- 8, 15, 20, 47, 4, 9, 30, 40, 12, 17
- 4, 8, 9, 15, 20, 47, 12, 17, 30, 40

Question No.48 4.00

Bookmark

A minimum state deterministic finite automaton accepting the language L={w | w ε {0,1} *, number of 0s and 1s in w are divisible by 3 and 5, respectively} has

- 10 states
- 9 states
- 11states
- 15 states

Question No.49 4.00

Bookmark

Choose the best synonym of the italicized word.
Nobody knew that Sunil had a *sinister* design in marrying her.

- sinful
- selfish
- murderous
- evil

Question No.50 4.00

Bookmark

Statement: Opening a Library in Achupatti will be a wastage.
Assumptions:
I. Inhabitants of Achupatti are illiterate.
II. Inhabitants of Achupatti are not interested in reading

- If only assumption II is implicit
- If both I and II are implicit
- If only assumption I is implicit
- If neither I nor II is implicit

Question No.51 4.00

Bookmark

Consider the grammar
E → E + n | E × n | n
For a sentence n + n × n, the handles in the right-sentential form of the reduction are

- n, E + n and E + n × n
- n, E + n and E + E × n
- n, E + n and E × n
- n, n + n and n + n × n

Question No.52 4.00

Bookmark

Consider a pipelined processor with the following four stages:

IF: Instruction Fetch
ID: Instruction Decode and Operand Fetch
EX: Execute
WB: Write Back
The IF, ID and WB stages take one clock cycle each to complete the operation. The number of clock cycles for the EX stage dependson the instruction. The ADD and SUB instructions need 1 clock cycle and the MUL instruction needs 3 clock cycles in the EX stage. Operand forwarding is used in the pipelined processor. What is the number of clock cycles taken to complete the following sequence of instructions?

ADD R2, R1, R0 R2 <- R0 + R1
MUL R4, R3, R2 R4 <- R3 * R2
SUB R6, R5, R4 R6 <- R5 - R4

- 8
- 14
- 10
- 7

Question No.53 4.00

Bookmark

Cyclomatic complexity is a _____

- Black box testing
- Green box testing
- White box testing
- Yellow box testing

Question No.54 4.00

Bookmark

Encapsulation and abstraction are defined as:

- Can be used anyway
- Hiding and hiding respectively
- Binding and hiding respectively
- Hiding and binding respectively

Question No.55 4.00

Bookmark

Which of the following is FALSE about abstract classes in Java?

- If we derive an abstract class and do not implement all the abstract methods, then the derived class should also be marked as abstract using 'abstract' keyword
- Abstract classes can have constructors
- A class can inherit from multiple abstract classes
- A class can be made abstract without any abstract method

Question No.56 4.00

Bookmark

Study the following information carefully and answer the question below it

The Director of an MBA college has decided that six guest lectures on the topics of Motivation, Decision Making, Quality Circle, Assessment Centre, Leadership and Group Discussion are to be organised on each day from Monday to Sunday.
(i) One day there will be no lecture (Saturday is not that day), just before that day Group Discussion will be organised.
(ii) Motivation should be organised immediately after Assessment Centre.
(iii) Quality Circle should be organised on Wednesday and should not be followed by Group Discussion.
(iv) Decision Making should be organised on Friday and there should be a gap of two days between Leadership and Group Discussion

On which day there is no lecture?

- Monday
- Wednesday
- Tuesday
- Sunday

Question No.57 4.00

Bookmark

Macro processor is an inbuilt function of

- Assembler
- Editor
- Linker
- Loader

Question No.58 4.00

Bookmark

A subset of a network that includes all the routers but contains no loops is called

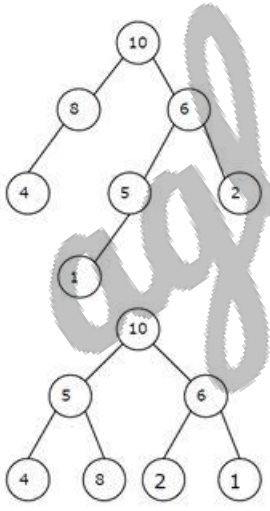
- Spanning tree
- Spider structure
- Spider tree
- Spanning structure

Question No.59 4.00

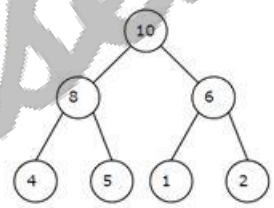
Bookmark

A max-heap is a heap where the value of each parent is greater than or equal to the values of its children. Which of the following is a max-heap?

(A)

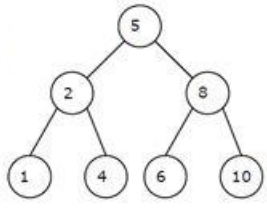


(B)



(C)

(D)



- C
- D
- A
- B

Question No.60 4.00

Bookmark

_____ she had been lied to, Sally got really angry.

- If Sally discovered
- Sally when discovered
- Having discovered
- Sally discovered

Question No.61 4.00

Bookmark

Statements: Stories are True, All true incidents are rumours.

Conclusion:

I. Stories are rumours.

II. Rumours are stories

- If only conclusion I follows
- If neither I nor II follows
- If either I or II follows
- If only conclusion II follows

Question No.62 4.00

Bookmark

A point P (5,1) is rotated by 90^{o} about a pivot point (2,2). What is the coordinate of new transformed point P'?

- (1,5)
- (3,5)
- (5,3)
- (2,4)

Question No.63 4.00

Bookmark

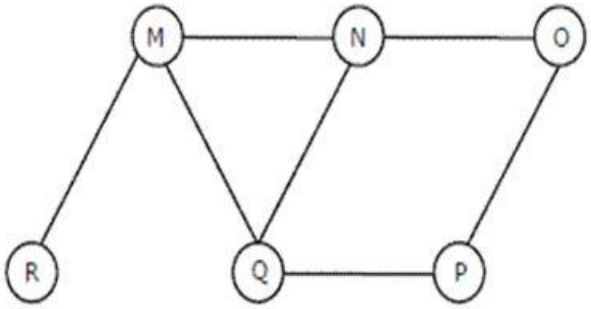
Wumpus World is a classic problem, best example of,

- Reasoning with Knowledge
- Single player Game
- Optimisation problem
- Two player Game

Question No.64 4.00

Bookmark

The Breadth First Search algorithm has been implemented using the queue data structure. One possible order of visiting the nodes of the following graph is



- NQMPOR
- QMNPRO
- QMNPOR
- MNOPQR

Question No.65 4.00

Bookmark

A RAM chip has a capacity of 1024 words of 8 bits each (1K × 8). The number of 2 × 4 decoders with enable line needed to construct a 16K × 16 RAM from 1K × 8 RAM is:

- 5
- 6
- 7
- 4

Question No.66 4.00

Bookmark

Dad often comes home late these days, _____?

- isn't it?
- doesn't he?
- is it?
- does he?

Question No.67 4.00

Bookmark

Kotlin is a

- Protocol
- Programming language
- Platform
- None of these

Question No.68 4.00

Bookmark

Transport layer aggregates data from different applications into a single stream before passing it to

- Physical layer
- Application layer
- Data link layer
- Network layer

Question No.69 4.00

Bookmark

A* algorithm is based on

- Breadth-First-Search
- Hill climbing
- Best-First-Search
- Depth-First –Search

Question No.70 4.00

Bookmark

In web application domain, RIA stands for

- Rich Information Apps
- Rich Internet Applications
- Rare Internet Apps
- All of these

Question No.71 4.00

Bookmark

Psychologist : Neurosis

- Oncologist: Measles
- Kids : Pediatrician
- Opthamologist : Catract
- Dermatologist: Sprain

Question No.72 4.00

Bookmark

A system program that combines separately compiled modules of a program into a form suitable for execution is

- Debugger
- Assembler
- Linking Loader
- Cross Compiler

Question No.73 4.00

Bookmark

Which of the following addressing modes are suitable for program relocation at run time?
i. Absolute addressing
ii.Base Register Addressing
iii.Relative Addressing
iv. Indirect Addressing

- (ii) and (iii)
- (i), (ii) and (iv)
- (i) and (iv)
- (i) and (ii)

Question No.74 4.00

Bookmark

When trying to access a URL, the following message is displayed on the browser:Server; Error 403
What could be the reason for the message?

- The requested HTML file is not available
- The requested HTML file or CGI script has insufficient permission.
- The first line of the output from the script is not a valid HTTP header
- The URL refers to a CGI script and the header of the script does not indicate where the interpreter is located

Question No.75 4.00

Bookmark

Find the odd one out?

- Chair : Arm
- Flower : Petal
- Circle : Arc
- Cover : Page

Question No.76 4.00

Bookmark

How many stacks are needed to implement a queue. Consider the situation where no other data structure like arrays, linked list is available to you.

- 4
- 2
- 1
- 3

Question No.77 4.00

Bookmark

Which of the following focuses on the discovery of (previously) unknown properties on the data?

- Data mining
- Data wrangling
- Machine Learning
- Big Data

Question No.78 4.00

Bookmark

Consider the following table of arrival time and burst time for three processes P0, P1 and P2.

Process	Arrival time	Burst Time
P0	0 ms	9 ms
P1	1 ms	4 ms
P2	2 ms	9 ms

The pre-emptive shortest job first scheduling algorithm is used. Scheduling is carried out only at arrival or completion of processes. What is the average waiting time for the three processes?

- 6.33ms
- 5.0 ms
- 7.33ms
- 4.33 ms

Question No.79 4.00

Bookmark

XPath is used to navigate through elements and attributes in_____

- XML document
- XHTML document
- XSL document
- XQuery document

Question No.80 4.00

Bookmark

A class IntStack to implement a stack of integers is defined as follows

```
class IntStack {
public:
IntStack( );
bool isEmpty( );
void push(int item);
int pop( );
int top( );
}
```

What happens if we execute the following statements?

```
IntStack s;
int n1, n2, n3;
s.push(10);
s.push(123);
s.push(42);
n1 = s.pop( );
n2 = s.top( );
s.push(n1);
n3 = s.pop( );
n1 = s.top( );
```

- Stack contains 42 (top), 10 (bottom); n1=42, n2=123, n3=143
- Stack contains 123 (top), 10 (bottom); n1=123, n2=123, n3=42
- Stack contains 42 (top), 42, 123, 10 (bottom); n1=42, n2=42; n3=42
- Stack contains 123 (top), 10 (bottom); n1=42, n2=42, n3=42

Question No.81 4.00

Bookmark

Choose the correct meaning of the italicized idiom.
The party in power *came down* on the side of a flexible and early economic policy to help the weaker sections.

- Decide to go to the corner
- Decide to rebuke severely
- Decide to support
- Decide to speak secretly

Question No.82 4.00

Bookmark

Consider the following context-free grammar over the alphabet

$\sum = \{a, b, c\}$ with S as the start symbol:

$S \rightarrow abScT \mid abcT$

$T \rightarrow bT \mid b$

Which of the following represents the language generated by the above grammar?

- $\{(ab^n cb^{m_1} cb^{m_2} \ldots cb^{m_n} \mid n, m_1, m_2, \ldots, m_n >= 1\}$
- $\{(ab)^n (cb^m)^n \mid n >= 1\}$
- $\{(ab)^n (cb)^n \mid n >= 1\}$
- $\{(ab)^n (cb^m)^n \mid n >= 1\}$

Question No.83 4.00

Bookmark

Which of these is a super class of all errors and exceptions in the Java language?

- Catchable
- RunTimeError
- Throwable
- RunTimeExceptions

Question No.84 4.00

Bookmark

A process executes the code
fork();
fork();
fork();
The total number of child processes created is_____

- 4
- 3
- 7
- 8

Question No.85 4.00

Bookmark

book : _____ : : comb : tooth

- Title
- Page
- Cover
- Knowledge

Question No.86 4.00

Bookmark

A server at 10% load is having 308 watts power and at 50% load is having 451 watts of power, saving is

- 5.4
- 3.4
- 2.1
- 2.4

Question No.87 4.00

Bookmark

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

- 11
- 9
- 15
- 12

Question No.88 4.00

Bookmark

Consider the following declaration of a two-dimensional array in C: char a [100][100]; Assuming that the main memory is byte-addressable and that the array is stored starting from memory address 0, the address of a [40][50] is

- 5050
- 5040
- 4040
- 4050

Question No.89 4.00

Bookmark

In Pentium processor, which write buffer is used by the pipeline ALUs in order to write the result to the memory?

- Internal Snoop Write Buffer
- Write-back Buffer
- External Snoop Write Buffer
- Line Replacement Write Buffer

Question No.90 4.00

Bookmark

Which of the following is method of JDBC batch process?

- setBatch()
- addBatch()
- deleteBatch()
- removeBatch()

Question No.91 4.00

Bookmark

How much number of times the instruction sequence below will loop before coming out of the loop?
A1: MOV AL, 00H INC AL JNZ A1

- 255
- 256
- Will not come out of the loop
- 1

Question No.92 4.00

Bookmark

Which testing is the re-execution of some subset of tests that have already been conducted to ensure the changes that are not propagated?

- Integration testing
- Regression testing
- Thread-based testing
- Unit testing

Question No.93 4.00

Bookmark

_____ partitions data and parity among all N+1 disks, instead of storing data in N-disks and parity in one disk.

- Bit interleaved parity
- Block interleaved parity
- Bit parity
- Block interleaved distributed parity

Question No.94 4.00

Bookmark

In Random forest you can generate hundreds of trees (say T1, T2 …..Tn) and then aggregate the results of these tree. Which of the following is true about individual(Tk) tree in Random Forest?
1. Individual tree is built on a subset of the features
2. Individual tree is built on all the features
3. Individual tree is built on a subset of observations
4. Individual tree is built on full set of observations

- 2 and 4
- 1 and 3
- 1 and 4
- 2 and 3

Question No.95 4.00

Bookmark

If a class B network on the Internet has a subnet mask of 255.255.248.0, what is the maximum number of hosts per subnet?

- 1023
- 1022
- 2046
- 2047

Question No.96 4.00

Bookmark

Select the Pair that best respresents the relationship that is given in the question:
Professor : Erudite

- Entrepreneur : Hardwork
- Carpenter : Furniture
- Mason : Architecure
- Inventor : Imaginative

Question No.97 4.00

Bookmark

Let L1 be a recursive language. Let L2 and L3 be languages that are recursively enumerable but not recursive. Which of the following statements is not necessarily true?

- L1 – L3 is recursively enumerable
- $L2 \cap L1$ is recursively enumerable
- $L2 \cup L1$ is recursively enumerable
- L2 – L1 is recursively enumerable

Question No.98 4.00

Bookmark

Consider a hash table of size seven, with starting index zero, and a hash function (3x + 4) mod7. Assuming the hash table is initially empty, which of the following is the contents of the table when the sequence 1, 3, 8, 10 is inserted into the table using closed hashing? Note that '_' denotes an empty location in the table.

- 1, 10, 8, _, _, _, 3
- 1, _, _, _, _, _,3
- 8, _, _, _, _, _, 10
- 1, 8, 10, _, _, _, 3

Question No.99 4.00

Bookmark

Which of the following is TRUE?

- Every relation in 3NF is also in BCNF
- Every relation in BCNF is also in 3NF
- A relation R is in 3NF if every non-prime attribute of R is fully functionally dependent on every key of R
- No relation can be in both BCNF and 3NF

Question No.100 4.00

Bookmark

The disadvantage of Binary Search is _____

- It may not work for floating point numbers
- It may not work for strings
- It has the overhead of sorting
- Its performance depends on the position of the search element in the array

Sr No.	MTECH Network and internet engg
1	Find the missing term in the series: 3, 20, 63, 144, 275,?
Alt1	354
Alt2	468
Alt3	548
Alt4	554

2	Choose word from the given options which bears the same relationship to the third word, as the first two bears: Anaemia: Blood :: Anarchy:?
Alt1	Lawlesness
Alt2	Government
Alt3	Monarchy
Alt4	Disorder

3	Teeth is related to Grit in the same way as Fist is related to…….?.....
Alt1	Blow
Alt2	Hand
Alt3	Open
Alt4	Clench

4	Select the lettered pair that has the same relationship as the original pair of words: Reproof: Scold
Alt1	Respite: Spite
Alt2	Romantic: Strong
Alt3	Salient: Prominent
Alt4	Chastise: Erring

5	Choose the alternative, which is similar to the given words: Bleat : Bray : Grunt
Alt1	Bark
Alt2	Croak
Alt3	Cry
Alt4	Scream

6	Spot the defective segment from the following:
Alt1	I wish
Alt2	I have a car
Alt3	to go shopping
Alt4	in the rain

7	Choose the meaning of the idiom/phrase from among the options given: Out of sorts
Alt1	unwell
Alt2	irrelevant
Alt3	in disorder
Alt4	out of love

8	The rowdy was at last done -------.
Alt1	over
Alt2	off
Alt3	away
Alt4	away with

9	Choose the option closest in meaning to the given word: BUCOLIC
Alt1	rustic
Alt2	utopian
Alt3	peaceful
Alt4	noisy

10	Choose the antonymous option you consider the best: CALLOW
Alt1	immature
Alt2	green
Alt3	clumsy
Alt4	veteran

11	If the seventh day of a month is three days earlier than Friday, what day will it be on the nineteenth day of the month ?
Alt1	Sunday
Alt2	Monday
Alt3	Wednesday
Alt4	Friday

12	Water is related to Ocean in the same way as Snow is related to ……
Alt1	Peaks
Alt2	Hail
Alt3	Glacier
Alt4	Mountain

13	A's father's brother's father is D. how is D related to A ?
Alt1	Father
Alt2	Grandfather
Alt3	Uncle
Alt4	Son

14	Find the odd man out:
Alt1	Squash
Alt2	football
Alt3	hockey
Alt4	Cricket

15	In a certain code language, if CRICKET is coded as 3923564, ROCKET is coded as 913564 and KETTLE is coded as 564406, then how is LITTLE coded in that language ?
Alt1	024406
Alt2	240406
Alt3	20446
Alt4	200446

16	At what angles are he hands of a clock inclined at 20 minutes past 7 ?
Alt1	80 degrees
Alt2	90 degrees
Alt3	100 degrees
Alt4	120 degrees

17	Odd one out: 2,4,6,8
Alt1	2
Alt2	4
Alt3	6
Alt4	8

18	Which is smallest:
Alt1	Quarter of 140
Alt2	Double of 4*4
Alt3	7*5
Alt4	Half of 72

19	What is the next alphabet in the following series Z D X H V L T ?
Alt1	Q
Alt2	N
Alt3	P
Alt4	O

20	How many times is the abbrevations FB shorter than the word FACEBOOK?
Alt1	4times
Alt2	3times
Alt3	5times
Alt4	Many

21	The value of the postfix expression 5 6 3 * + 2 4 * + is _____.
Alt1	31
Alt2	26
Alt3	120
Alt4	40

22	Which of the following sorting method is suitable for applications where the input is too large to fit into memory?
Alt1	Shell sort

Alt2	Quick sort
Alt3	Bubble sort
Alt4	Polyphase merge

23	The type of algorithm in which a decision is made that appears to be good, without regard for future consequences is called _____.
Alt1	Greedy algorithm
Alt2	Pre emptive algorithm
Alt3	Non-Pre emptive algorithm
Alt4	Branch and bound algorithm

24	Rapid Application Development is an_____ software process model.
Alt1	Incremental
Alt2	Universal Prescriptive
Alt3	Initial classical
Alt4	Evolutionary

25	_____is qualitative measures of degree to which classes are connected to each other.
Alt1	Abstraction
Alt2	Cohesion
Alt3	Coupling
Alt4	Elicitation

26	Equivalence partitioning is a _____ testing method.
Alt1	White Box
Alt2	Green Box
Alt3	Black Box
Alt4	Basic path

27	Which of the following statement is true?
Alt1	If a language is context free it can always be accepted by a deterministic push-down automaton
Alt2	The complement of a context free language is context free
Alt3	The union of two context free languages is context free
Alt4	The intersection of two context free languages is context free

28	Correct hierarchical relationship among context- free, right-linear, and context-sensitive language is _____.
Alt1	context-free $\subset$ right-linear $\subset$ context-sensitive
Alt2	context-free $\subset$ context-sensitive $\subset$ right-linear
Alt3	context-sensitive $\subset$ right-linear $\subset$ context-free
Alt4	right-linear $\subset$ context-free $\subset$ context-sensitive

29	Let Σ = {a, b, c, d, e}. The number of strings in Σ^* of length 4 such that no symbol is used more than once in a string is _____.
Alt1	360
Alt2	120
Alt3	35

Alt4	36

30	The following CFG is in _____. S → aBB B → bAA A → a B → b
Alt1	Chomsky normal form but not strong Chomsky normal form
Alt2	Weak Chomsky normal form but not Chomsky normal form
Alt3	Strong Chomsky normal form
Alt4	Greibach normal form

31	Which of the following is the most powerful parser?
Alt1	SLR
Alt2	LALR
Alt3	Canonical LR
Alt4	operator-precedence

32	In a compiler, keywords of a language are recognized during _____.
Alt1	Data flow analysis
Alt2	parsing of the program written
Alt3	the lexical analysis of the program
Alt4	the code generation

33	Consider the grammar: E ::= E+E |E*E | (E) | a The number of right most derivation for the sentence (a) is _____.
Alt1	2
Alt2	4
Alt3	1
Alt4	3

34	Which of the following intermediate best suited for derivation of common sub-expression?
Alt1	triples
Alt2	trees
Alt3	qudraples
Alt4	postfix code

35	DVST stands for _____.
Alt1	Digital View Storing Table
Alt2	Direct Visual Storage Tube
Alt3	Direct View Storage Tube
Alt4	Digital View Storage Tube

36	Resources are allocated to the process on non-sharable basis is called _____.
Alt1	Non Pre-Emption

Alt2	Mutual exclusion
Alt3	Hold and wait
Alt4	Pre-Emption

37	In Round Robin CPU scheduling, as time quantum is increased the average turn-around time _____.
Alt1	Remains constant
Alt2	Decreases
Alt3	Varies irregularly
Alt4	Increases

38	A system has n resources of same type. These resources are shared by 3 processes P1, P2, and P3 which have peak demands 3, 4, and 5 respectively. For what value of n deadlock will not occur?
Alt1	7 Resources
Alt2	9 Resources
Alt3	10 Resources
Alt4	13 Resources

39	Banker's algorithm for resource allocation deals with _____.
Alt1	Mutual exclusion
Alt2	Deadlock recovery
Alt3	Deadlock prevention
Alt4	Compiler Optimization

40	Distributed OS works on the _____ principle.
Alt1	File Foundation
Alt2	Multi system image
Alt3	Single System image
Alt4	Networking image

41	Signals that run from 0 up to a maximum frequency are called _____.
Alt1	Pause band signals
Alt2	Radio Signals
Alt3	Maximum frequency Signals
Alt4	Base band signals

42	A computer on a 6-Mbps network is regulated by a token bucket. The token bucket is filled at the rate of 1 Mbps. It is initially filled to capacity with 10 megabits. How long can the computer transmit at the full 6 Mbps?
Alt1	2 seconds
Alt2	5 seconds
Alt3	8 seconds
Alt4	10 seconds

43	The language accepted by a Push Down Automata is _____.
Alt1	Type 0
Alt2	Type 1

Alt3	Type 4
Alt4	Type 2

44	Non-modifiable procedures are called _____.
Alt1	Concurrent procedures
Alt2	Serially usable procedures
Alt3	Re-entrant procedures
Alt4	Top-down procedures

45	DBMS provides the facility of accessing data from a database through _____.
Alt1	DDL
Alt2	DML
Alt3	DBA
Alt4	Schema

46	A weak entity type always has _____.
Alt1	Partial participation constraint
Alt2	No participation constraint
Alt3	Total participation constraint
Alt4	Either partial or total participation constraint

47	Which of these is a characteristic of RAID 5?
Alt1	Dedicated parity
Alt2	Double parity
Alt3	Hamming code parity
Alt4	Distributed parity

48	_____ signal prevents the microprocessor from reading the same data more than one.
Alt1	Pipelining
Alt2	Handshaking
Alt3	Controlling
Alt4	Alert

49	The RST7 instruction in 8085 microprocessor is equal to _____
Alt1	CALL 0010 H
Alt2	CALL 0034 H
Alt3	CALL 0038 H
Alt4	CAL 003C H

50	What is the output of the program in C?
	#include<stdio.h>
	main( )
	{
	int a=10;
	int b=20;
	a= a+b;
	b= a-b;
	a= a-b;
	printf("%d%d", a, b);
	}

Alt1	20, 10
Alt2	10, 10
Alt3	10, 20
Alt4	20, 30

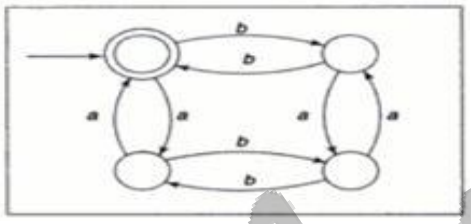
51	The number of edges in a regular graph of degree'd' and 'n' vertices is
Alt1	Maximum of n,d
Alt2	n+d
Alt3	nd
Alt4	nd/2

52	The number of possible binary tree with 4 nodes is
Alt1	12
Alt2	14
Alt3	16
Alt4	24

53	The following program fragment
	int a = 4, b = 6;
	printf("%d", a!=b);

	The following program fragment
	int a = 4, b = 6;
	printf("%d", a!=b);

Alt1	Outputs an error message
Alt2	Prints 0
Alt3	Prints 1
Alt4	Garbage value

54	The FSM pictured in the below figure recognize the
	
Alt1	Any string of odd number of a's
Alt2	Any string of odd number of a's and even number of b's
Alt3	Any string of even number of a's and even number of b's
Alt4	Any string of odd number of a's and odd number of b's

55	Shift-Reduce parsers are
Alt1	Top-down parser
Alt2	Bottom-up parser
Alt3	May be top-down or bottom-up parser
Alt4	None of the above

56	Consider six memory partitions of sizes 200KB, 400KB, 600KB, 500KB, 300KB and 250KB, where KB refers to Kilobyte. These partition needs to be allotted to four processes of sizes 357KB, 210KB, 468KB and 491KB in that order. If best fit algorithm is used, which partitions are not allotted to any process?
Alt1	200KB and 300KB
Alt2	200KB and 250KB
Alt3	250KB and 300KB
Alt4	300KB and 400KB

57	An optimizing compiler

Alt1	Is optimized to take less time for execution
Alt2	Is optimized to occupy less space
Alt3	Optimized the code
Alt4	None of the above

58	A resource-management platform responsible for managing computing resources in clusters and using them for scheduling of users' applications in hadoop environment
Alt1	Hadoop HDFS
Alt2	Hadoop MapReduce
Alt3	Hadoop Common
Alt4	Hadoop Yarn

59	In distributed systems, link and site failure is detected by
Alt1	Polling
Alt2	Handshaking
Alt3	token passing
Alt4	Token sharing

60	The potential overuse of a single parity disk is avoided in RAID level ____.
Alt1	5
Alt2	4
Alt3	3
Alt4	2

61	A system is in a safe state only if there exists a :
Alt1	safe allocation
Alt2	safe resource
Alt3	safe sequence
Alt4	All of these

62	A transformation that slants the shape of an object is called
Alt1	Reflection
Alt2	Shear
Alt3	Distortion
Alt4	Scaling

63	What is the natural mask for class-c network
Alt1	255.255.255.1
Alt2	255.255.255.0
Alt3	255.255.255.255
Alt4	255.255.255.254

64	A system has 6 identical resources and N processes competing for them. Each process can request at most 2 resources. Which one of the following values of N could lead to a deadlock?
Alt1	1
Alt2	2
Alt3	3

Alt4	4

65	Consider the following function written in C programming language
	void foo(char *a) {
	if(*a && *a != ' ') {
	foo(a+1);
	putchar(*a)
	}
	}
	The output of the above function on input "ABCD EFGH" is

Alt1	ABCD EFGH
Alt2	ABCD
Alt3	HGFE DCBA
Alt4	DCBA

66	How many tuples does the result of the following relational algebra expression contain? Assume that the schema of AUB is the same as that of A. (AUB) ⋈ A.Id >40 Ú C.Id< 15 C

Consider the following relations A, B and C:

A

ID	Name	Age
12	Arun	60
15	Shreya	24
99	Rohit	11

B

ID	Name	Age
15	Shreya	24
25	Hari	40
98	Rohit	20
99	Rohit	11

C

Id	Phone	Area
10	2200	02
99	2100	01

Alt1	7
Alt2	4
Alt3	5

Alt4	9

67	How many tuples does the result of the following SQL query contain? SELECT A.Id FROM A WHERE A.Age > ALL (SELECT B.Age FROM B WHERE B.Name = 'Arun')
	Consider the following relations A, B and C: A ID Name Age 12 Arun 60 15 Shreya 24 99 Rohit 11 B ID Name Age 15 Shreya 24 25 Hari 40 98 Rohit 20 99 Rohit 11 C Id Phone Area 10 2200 02 99 2100 01
Alt1	4
Alt2	3
Alt3	0
Alt4	1

68	A RAM chip has a capacity of 1024 words of 8 bits each (1K × 8). The number of 2 × 4 decoders with enable line needed to construct a 16K × 16 RAM from 1K × 8 RAM is
Alt1	4
Alt2	5
Alt3	6
Alt4	7

69	Determine the maximum length of the cable (in km) for transmitting data at a rate of 500 Mbps in an Ethernet LAN with frames of size 10,000 bits. Assume the signal speed in the cable to be 2,00,000 km/s.
Alt1	1
Alt2	2
Alt3	2.5
Alt4	5

70	1. Consider an instruction pipeline with five stages without any branch prediction: Fetch Instruction (FI), Decode Instruction (DI), Fetch Operand (FO), Execute Instruction (EI) and Write Operand (WO). The stage delays for FI, DI, FO, EI and WO are 5 ns, 7 ns, 10 ns, 8 ns and 6 ns, respectively. There are intermediate storage buffers after each stage and the delay of each buffer is 1 ns. A program consisting of 12 instructions I1, I2, I3, …, I12 is executed in this pipelined processor. Instruction I4 is the only branch instruction and its branch target is I9. If the branch is taken during the execution of this program, the time (in ns) needed to complete the program is

Alt1	132
Alt2	165
Alt3	176
Alt4	328

71	Match the following: 1) Waterfall model — a)Specifications can be developed incrementally 2) Evolutionary model — b) Requirements compromises are inevitable 3) Component-based software engineering — c) Explicit recognition of risk 4) Spiral development — d) Inflexible partitioning of the project into stages
Alt1	1-a, 2-b, 3-c, 4-d
Alt2	1-d, 2-a, 3-b, 4-c
Alt3	1-d, 2-b, 3-a, 4-c
Alt4	1-c, 2-a, 3-b, 4-d

72	In designing a computer's cache system, the cache block (or cache line) size is an important parameter. Which one of the following statements is correct in this context?
Alt1	A smaller block size implies better spatial locality
Alt2	A smaller block size implies a smaller cache tag and hence lower cache tag overhead
Alt3	A smaller block size implies a larger cache tag and hence lower cache hit time
Alt4	A smaller block size incurs a lower cache miss penalty

73	An IP router with a Maximum Transmission Unit (MTU) of 1500 bytes has received an IP packet of size 4404 bytes with an IP header of length 20 bytes. The values of the relevant fields in the header of the third IP fragment generated by the router for this packet are
Alt1	MF bit: 0, Datagram Length: 1444; Offset: 370
Alt2	MF bit: 1, Datagram Length: 1424; Offset: 185
Alt3	MF bit: 1, Datagram Length: 1500; Offset: 370
Alt4	MF bit: 0, Datagram Length: 1424; Offset: 2960

74	Which one of the following protocols is NOT used to resolve one form of address to another one?
Alt1	DNS
Alt2	ARP
Alt3	DHCP
Alt4	RARP

75	The minimum number of JK flip-flops required to construct a synchronous counter with the count sequence (0,0,1,1,2,2,3,3,0,0,..) is

Alt1	2
Alt2	3
Alt3	22
Alt4	32

76	Using Demorgan's theorem we can convert any AND-OR structure into
Alt1	NAND-NAND
Alt2	OR-NAND
Alt3	NAND –NOR
Alt4	NOR-NAND

77	Which group of instructions does not affect the flags?
Alt1	Arithmetic operations
Alt2	Logic operations
Alt3	Data transfer operations
Alt4	Branch operations

78	Consider a hash table with 100 slots. Collisions are resolved using chaining. Assuming simple uniform hashing, what is the probability that the first 3 slots are unfilled after the first 3 insertions?
Alt1	(97 × 97 × 97)/1003
Alt2	(99 × 98 × 97)/1003
Alt3	(97 × 96 × 95)/1003
Alt4	(97 × 96 × 95)/(3! × 1003)

79	The transport layer protocols used for real time multimedia, file transfer, DNS and email, respectively are
Alt1	TCP, UDP, UDP and TCP
Alt2	UDP, TCP, TCP and UDP
Alt3	UDP, TCP, UDP and TCP
Alt4	TCP, UDP, TCP and UDP

80	A computer uses 46-bit virtual address, 32-bit physical address, and a three-level paged page table organization. The page table base register stores the base address of the first-level table (T1), which occupies exactly one page. Each entry of T1 stores the base address of a page of the second-level table (T2). Each entry of T2 stores the base address of a page of the third-level table (T3). Each entry of T3 stores a page table entry (PTE). The PTE is 32 bits in size. The processor used in the computer has a 1 MB 16-way set associative virtually indexed physically tagged cache. The cache block size is 64 bytes What is the size of a page in KB in this computer?
Alt1	2
Alt2	4
Alt3	8
Alt4	16

81	A computer uses 46-bit virtual address, 32-bit physical address, and a three-level paged page table organization. The page table base register stores the base address of the first-level table (T1), which occupies exactly one page. Each entry of T1 stores the base address of a page of the second-level table (T2). Each entry of T2 stores the base address of a page of the third-level table (T3). Each entry of T3 stores a page table entry (PTE). The PTE is 32 bits in size. The processor used in the computer has a 1 MB 16-way set associative virtually indexed physically tagged cache. The cache block size is 64 bytes What is the minimum number of page colours needed to guarantee that no two synonyms map to different sets in the processor cache of this computer?
Alt1	2
Alt2	4
Alt3	8
Alt4	16

82	A bit-stuffing based framing protocol uses an 8-bit delimiter pattern of 01111110. If the output bit-string after stuffing is 01111100101, then the input bit-string is
Alt1	111110100
Alt2	111110101
Alt3	111111101
Alt4	111111111

83	What is the output of the following C code
	Assume that the address of x is 2000(in decimal) and an integer requires 4 bytes of memory
	int main() {
	unsigned int x[4][3]= { {1,2,3}, {4,5,6}, {7,8,9}, {10,11,12} };
	printf(" %u %u %u", x+3, *(x+3), *(x+2)+3);
	}

	What is the output of the following C code
	Assume that the address of x is 2000(in decimal) and an integer requires 4 bytes of memory
	int main() {
	unsigned int x[4][3]= { {1,2,3}, {4,5,6}, {7,8,9}, {10,11,12} };
	printf(" %u %u %u", x+3, *(x+3), *(x+2)+3);
	}

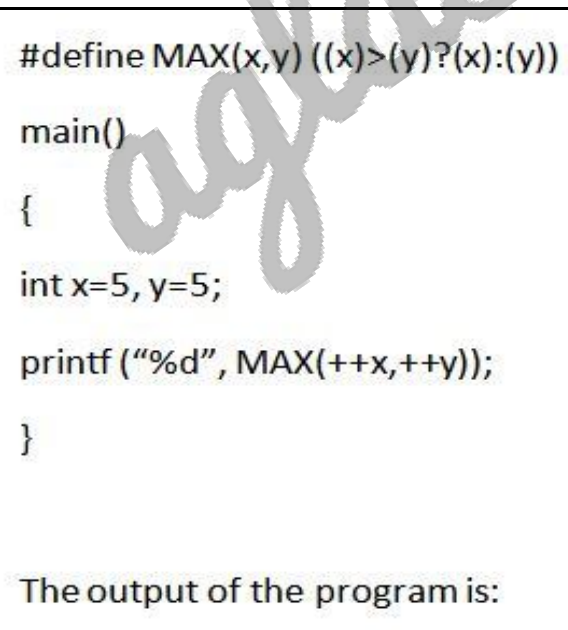
Alt1	2.0362E+11
Alt2	2012,4,2204
Alt3	2036, 10,10

Alt4	2012,4,6

84	A link has a transmission speed of 106 bits/sec. It uses data packets of size 1000 bytes each. Assume that the acknowledgement has negligible transmission delay, and that its propagation delay is same as the data propagation delay. Also assume that the processing delays at nodes are negligible. The efficiency of stop and wait protocol in this setup is exactly 25%. The value of the one way propagation delay (in milliseconds) is
Alt1	24
Alt2	12
Alt3	4
Alt4	32

85	The number of states in the minimal deterministic finite automation corresponding to the regular expression (0+1)* (10) is
Alt1	2
Alt2	3
Alt3	4
Alt4	5

86	Consider a paging hardware with a TLB. Assume that the entire page table and all the pages are in the physical memory. It takes 10 milliseconds to search the TLB and 80 milliseconds to access the physical memory. If the TLB hit ratio is 0.6, the effective memory access time (in milliseconds) is
Alt1	122
Alt2	244
Alt3	124
Alt4	248

87	
Alt1	7
Alt2	5
Alt3	6

Alt4	99

88	Given the following definitions, what will be the value of r?
	int *p, *q, r;
	int values[30];
	p=&values[0];
	q=values+29;
	r=++q-p;

Alt1	address of q minus p
Alt2	number of elements in the array
Alt3	(value pointed by q)+1-(value pointed by p)
Alt4	qp

89	What will be the output of the program?
	#include <stdio.h>
	static int =5;
	main()
	{
	int sum=0;
	do
	{
	sum+=(1/i);
	}while(0<i--);
	printf ("%d", sum);
	}

Alt1	sum of the series is printed
Alt2	compilation error
Alt3	runtime error

Alt4	typo error

90	#include <stdio.h>
	enum mode={green, red, orange, blue, white};
	main()
	{
	green = green+1;
	printf ("%d"%d",green,red);
	}
	The output of the program will be:

Alt1	1,1
Alt2	0,1
Alt3	no output, error in compilation
Alt4	1,2

91	What is the size of ptr1 and ptr2? Struct x{
	Int j;
	Char k[100];
	Unsigned I;
	};
	int *ptr1;
	struct x *ptr2;

Alt1	same
Alt2	2, 104
Alt3	2, undefined for memory is not allowed
Alt4	2, 4

92	What is the output of the following program?#include <stdio.h>
	main(0
	{
	int i=0;
	switch(i)
	{
	case 0: i++;
	case 1: i++2;
	case 2: ++i;
	}
	printf ("%d", i++);
	}
	The output of the program is:

Alt1	1
Alt2	3
Alt3	4
Alt4	5

93	If i=5, what is the output for printf ("%d%d%d", ++i,i,i++)?
Alt1	5,6,7
Alt2	6,6,7
Alt3	7,6,5
Alt4	6,5,6

94	For the following code, how many times is the printf function executed?
	int i,j;
	for (i=0;i<=10;i++);
	for (j=0;j<=10;j++);
	printf("i=%d,j=%d\n",i,j);

Alt1	121

Alt2	11
Alt3	10
Alt4	129

95	What is the output generated for the following code? #define square (a) (a*a) printf("%d",square(4+5));
Alt1	81
Alt2	4
Alt3	29
Alt4	18

96	For the following statement, find the values generated for p and q.
	int p=0, q=1;
	p=q++;
	p=++q;
	p=q--;
	p=--q;

Alt1	1,1
Alt2	0,0
Alt3	3,2
Alt4	1,2

97	What is the output generated by the following program? #include <stdio.h>
	main()
	{
	int a, count;
	int func(int);
	for(count=1;count<=5;++count)
	{
	a=func(count);
	printf("%d",a);
	}}
	int func(int x)
	{
	int y;
	y=x*x;
	return (y);
	}

Alt1	1234567
Alt2	2516941
Alt3	9162514
Alt4	1491625

98	How many X's are printed? for (i=0;j=10;i<j;i++,j--) printf("X");
Alt1	10
Alt2	5
Alt3	4
Alt4	45

99	In a signed magnitude notation, what is the minimum value that can be represented with 8 bits?
Alt1	-128
Alt2	-255
Alt3	-127
Alt4	0

100	Write one statement equivalent to the following two statements: x=sqr(a); return(x);
Alt1	return(sqr(a));

Alt2	printf(“sqr(a)”);
Alt3	return(a*a*a);
Alt4	printf(“%d”,sqr(a));

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1 of 100
185 PU_2015_394
In Linux, _____ command would display all lines in a file that starts with a particular string.

- look
- view
- list
- show

2 of 100
140 PU_2015_394
If the instruction contains operation code and address of the operand, the instruction is said to be in the:-

- Indexed mode
- Direct addressing mode
- Immediate addressing mode
- Memory addressing

3 of 100
105 PU_2015_394
StarBand provides:-

- FTTH internet access
- Telephone access
- Satellite access
- Cable access

4 of 100
218 PU_2015_394
Recursive descent parsing is an example of:-

- Bottom up parsing
- Predictive parsing
- Operator precedence parsing
- Top down parsing

5 of 100
200 PU_2015_394
Massively parallel machine is:-

- Describes the structure of the contents of a database
- A computer where each processor has its own operating system, its own memory and its own hard disk
- A programming language based on logic

- A computer with several processors

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215 PU_2015_394

The graph showing interdependencies of the attributes of different nodes in parse tree is:-

- Data Flow diagram
- Flow graph
- Dependency graph
- Dependency Directed graph

7 of 100

195 PU_2015_394

Which is not true?

- The intersection of two context-free languages is context-free
- The reverse of a context-free language is context-free, but the complement need not be
- The union and concatenation of two context-free languages is context-free
- Every regular language is context-free because it can be described by a regular grammar

8 of 100

189 PU_2015_394

Robot machine might have cameras and infrared range finders for _____ and various motors of _____.

- Actuators ; Sensors
- Sensors ; Agents
- Agents ; Actuators
- Sensors ; Actuators

9 of 100

157 PU_2015_394

The method of assigning a part of the main-memory address space to I/O ports is called:-

- Memory-mapped I/O
- I/O mapped I/O
- I/O Mapping
- Peripheral I/O

10 of 100

217 PU_2015_394

Graph showing basic blocks and their successor relationship is called:-

- Control graph
- Flow graph

- Direct acyclic graph
- Dependency graph

11 of 100

176 PU_2015_394

_____ is required to build native code applications in Android environment.

- CLR
- ARR
- NDK
- APK

12 of 100

187 PU_2015_394

OpenCV is a:-

- Computer Vision Library
- Composite media Library
- Computer Video Library
- Complex Vision Library

13 of 100

106 PU_2015_394

What is FRAD in frame relay network?

- FRAD is used for error detection
- FRAD is used for error correction
- FRAD assembles and disassembles the frames coming from other protocols
- FRAD is used for modulation and demodulation

14 of 100

214 PU_2015_394

If two finite state machines M1 and M2 are isomorphic then:-

- They cannot be transformed to each other
- By relabeling edges M1 can be transformed to M2
- By relabeling states M1 can be transformed to M2
- By relabeling both edges and states M1 can be transformed to M2

15 of 100

204 PU_2015_394

Which is not Familiar Connectives in First Order Logic?

- If
- Or

- And
- Not

16 of 100

199 PU_2015_394

Evolutionary computation is:-

- Combining different types of method or information
- Used to solve complex evolving problems
- Decision support systems that contain an information base filled with the knowledge of an expert formulated in terms of if-then rules
- Approach to the design of learning algorithms that is structured along the lines of the theory of evolution

17 of 100

178 PU_2015_394

The recently released development environment for Android App development is called:-

- Android Backer
- Android Studio
- Android Builder
- Android Pad

18 of 100

211 PU_2015_394

What is used for tracking uncertain events?

- Sensors
- Tracker
- Actuators
- Filtering algorithm

19 of 100

202 PU_2015_394

What does the bayesian network provide?

- Complete description of the problem
- Partial description of the domain
- A network with probabilistic values
- Complete description of the domain

20 of 100

212 PU_2015_394

Peephole optimization is a technique for:-

- It does not generate code

- Locally improving the target code
- Restricted improvement of code
- Generate ready to execute code

21 of 100
196 PU_2015_394
Inductive learning involves finding a:-

- Regular Hypothesis
- Inconsistent Hypothesis
- Irregular Hypothesis
- Consistent Hypothesis

22 of 100
156 PU_2015_394
When a free block (k bytes) is allocated to make room for the new incoming process (p bytes) and (where k > p), the block is split into used area and unused area (k - p) is called:-

- Compaction
- Internal fragmentation
- Swapping
- External fragmentation

23 of 100
209 PU_2015_394
Which is used to compute the truth of any sentence?

- Predicate logic
- First-order logic
- Semantics of propositional logic
- Alpha-beta pruning

24 of 100
194 PU_2015_394
In an Unsupervised learning:-

- Neither inputs nor outputs are given
- Specific output values are given
- Specific output values are not given
- No specific inputs are given

25 of 100
201 PU_2015_394
Which is not a desirable property of a logical rule-based system?

- Attachment
- Truth-Functionality
- Locality
- Detachment

26 of 100
184 PU_2015_394
With respect to networks, ARP stands for:-

- Advanced Rapid Protocol
- Address Resolution Protocol
- Address Reservation Protocol
- Advanced Resource Protocol

27 of 100
163 PU_2015_394
Which of the following is a recently exposed vulnerability?

- ViNets
- Tracknet
- Heartbleed
- Heartbeat

28 of 100
103 PU_2015_394
For connecting modem, a computer must be equipped with a port that conforms to the RS-232 standard of the Electronic Industries Association of America. What do the letters 'RS' stand for?

- Recognised Standard
- Random Sequence
- Registered Source
- Recommended Standard

29 of 100
183 PU_2015_394
_____ provides secure tunneling capabilities.

- OpenVSH
- OpenESH
- OpenRSH
- OpenSSH

30 of 100
192 PU_2015_394

Which is not a property of representation of knowledge?

- Inferential Efficiency
- Representational Adequacy
- Representational Verification
- Inferential Adequacy

31 of 100

198 PU_2015_394

Third component of a planning system is to:-

- Detect when a solution has been found
- Detect when solution will be found
- Detect whether multiple solutions exist
- Detect whether solution exists or not

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207 PU_2015_394

What was originally called the "imitation game" by its creator?

- The Logic Theorist
- The Turing Test
- Cybernetics
- Lisp

33 of 100

188 PU_2015_394

The original LISP machines produced by both LMI and Symbolics were based on research performed at:-

- RAMD
- Stanford University
- CMU
- MIT

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210 PU_2015_394

An auto-associative network is:-

- A neural network that contains no loops
- A neural network that has only one loop
- A single layer feed-forward neural network with pre-processing
- A neural network that contains feedback

35 of 100

186 PU_2015_394

Which of the following is not free and open source license?

- MIT
- Windows
- Apache
- Creative Commons

36 of 100

197 PU_2015_394

What is Transposition rule?

- From P → Q, infer ~Q → ~P
- From P → Q, infer Q → ~P
- From P → Q, infer ~Q → P
- From P → Q, infer Q → P

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219 PU_2015_394

In operator precedence parsing, precedence relations are defined:-

- Only for certain pairs of terminals
- Only for certain pairs of non-terminals
- For all pairs of non-terminals and terminals
- To delimit the handler

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141 PU_2015_394

The CMP instruction is used to perform:-

- Two's complement operation
- One's complement operation
- Compare Operation
- Complement Operation

39 of 100

113 PU_2015_394

Which of the following is not a form of DoS attack?

- Vulnerability attack
- Connection flooding
- Bandwidth flooding
- Man in the middle attack

40 of 100

173 PU_2015_394

Zotero is a:-

- Browser
- Reference Manager
- Protocol
- Firewall

41 of 100

179 PU_2015_394

Which of the following is associated with Big Data?

- Hadoop
- Big L
- Chrome
- Data centre

42 of 100

190 PU_2015_394

_____ is an environment in which the search takes place.

- Problem instance
- Problem space
- Problem place
- Data space

43 of 100

206 PU_2015_394

How many possible sources of complexity are there in forward chaining?

- 1
- 4
- 3
- 2

44 of 100

155 PU_2015_394

The dynamic RAM is constructed with the help of:-

- Memory cells
- Semiconductor memory
- Flip flops
- Capacitors

45 of 100

181 PU_2015_394

_____ is a major problem of using Pointers.

- Virtuality
- Speed
- Dangling Pointers
- Storage

46 of 100

180 PU_2015_394

Which of the following is not related to programming?

- C+
- VB
- QT
- C#

47 of 100

169 PU_2015_394

JSON stands for:-

- JavaScript Object Notation
- JavaScript Ontology Notation
- JavaScript Object Naming
- JavaScript Original Notation

48 of 100

139 PU_2015_394

A program that interprets the input from a keyboard and converts input into its binary equivalent is called:-

- Binary Converter
- Linker
- Monitor Program
- Loader

49 of 100

104 PU_2015_394

What is the port number for POP3?

- 110
- 90
- 10
- 100

50 of 100

142 PU_2015_394

The operation that performs subtraction operation without using subtraction operation is called:-

- Two's complement operation
- Subtraction operation
- Twos' complement addition
- One's complement operation

51 of 100

191 PU_2015_394

_____ are rules of thumb that may solve a given problem, but do not guarantee a solution.

- Weak methods
- Strong methods
- Probabilistic
- Heuristic

52 of 100

213 PU_2015_394

Consider the grammar:

S → ABSC/Abc
BA → AB
Bb → bb
Ab → ab
Aa → aa

Which of the following sentences can be generated by this grammar?

- abcc
- aabc
- abc
- aab

53 of 100

208 PU_2015_394

What is the advantage of totally ordered plan in constructing the plan?

- Flexibility
- Availability
- Easy to use
- Reliability

54 of 100

203 PU_2015_394

Which of the following "laws" Azimov's first and most important law of robotics?

- robots should be used to eliminate jobs of human workers

- Robots must never take actions harmful to humans
- Robot actions must never result in damage to the robot
- Robots must make business a greater profit

55 of 100
182 PU_2015_394
Which of the following is a Vulnerability scanning tool?

- Vulscan
- VScanner
- VulNET
- OpenVAS

56 of 100
205 PU_2015_394
Which is more suitable normal form to be used with definite clause?

- Generalized modus ponens
- Positive literal
- Negative literal
- Neutral literal

57 of 100
216 PU_2015_394
Which of the following is not an intermediate code form?

- Postfix notation
- Quadruples
- Syntax trees
- Three address codes

58 of 100
177 PU_2015_394
Which of the following is a popular choice for data storage in Android application development?

- Sqlite
- ASQL
- PSQL
- SQL+

59 of 100
175 PU_2015_394
The accessibility guidelines for rich internet applications is called as:-

- ARIA

- RIA 2.0
- RIA+
- RIAS

60 of 100

193 PU_2015_394

Machine learning is:-

- The selective acquisition of knowledge through the use of computer programs
- The selective acquisition of knowledge through the use of manual programs
- The autonomous acquisition of knowledge through the use of manual programs
- The autonomous acquisition of knowledge through the use of computer programs

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242 PU_2015_394

_____ selects from jobs in memory those jobs that are ready to execute and allocates the CPU to them.

- Short-term (CPU scheduler)
- Medium-term scheduler
- Long-term (Job scheduler)
- Long-term (CPU scheduler)

62 of 100

254 PU_2015_394

Which of the following operator takes only integer operands?

- +
- %
- *
- -

63 of 100

248 PU_2015_394

Consider a paging system with the page table stored in memory. If a memory reference takes 200 nanoseconds, how long does a paged memory reference take?

- 400 nanoseconds
- 100 nanoseconds
- 200 nanoseconds
- 300 nanoseconds

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225 PU_2015_394

A grammar where all the productions are in the form A → BC or A → a is said to be in:-

- Chomsky Normal Form
- Boyce Codd Normal Form
- Well Formed
- Greibach Normal Form

65 of 100

255 PU_2015_394

Who invented the C Language?

- James Gosling
- Bjarne Stroustrup's
- Dennis Ritche
- Tim Berners-Lee

66 of 100

250 PU_2015_394

What does Belady's Anomaly related to?

- Memory Management Algorithm
- Disk Scheduling Algorithm
- Page Replacement Algorithm
- Deadlock Prevention Algorithm

67 of 100

249 PU_2015_394

Consider a paging system with the page table stored in memory. If we add associative registers, and 75 percent of all page-table references are found in the associative registers, what is the effective memory reference time? (Assume that finding a page-table entry in the associative registers takes zero time, if the entry is there.)

- Effective access time = 350 nanoseconds
- Effective access time = 250 nanoseconds
- Effective access time = 750 nanoseconds
- Effective access time = 300 nanoseconds

68 of 100

251 PU_2015_394

What is dispatch latency?

- The time taken to seek a file in disk
- The whole time taken by all processors
- The time taken by the dispatcher to stop one process and start another
- The time taken by the processor to write a file into disk

69 of 100

238 PU_2015_394

_____ is a much more effective way of overlapping I/O and CPU operations.

- Schedulers
- Spooling
- Buffering
- Perfecting

70 of 100

235 PU_2015_394

Match the following:- (Codes)

1	Chomsky Normal form	i	S → bSS/aS/c
2	Greibach Normal form	ii	S → aSb/ab
3	S Grammar	iii	S → AS/ a A → SA/b
4	LL(1) Grammar	iv	S → aBB/aB/a B → b

- 1 - iii; 2 - iv; 3 - i; 4 - ii
- 1 - iii; 2 - iv; 3 - ii; 4 - i
- 1 - iii; 2 - i; 3 - ii; 4 - iv
- 1 - iv; 2 - iii; 3 - i; 4 - ii

71 of 100

237 PU_2015_394

_____ System uses CPU scheduling and multiprogramming to provide economical interactive use of a system.

- Real time
- Interactive
- Batch
- Time sharing

72 of 100

252 PU_2015_394

What are two types of Semaphores?

- Counting semaphore and Binary semaphore
- Analog semaphore and Digital semaphore
- Critical semaphore and System semaphore

- Digital semaphore and Binary semaphore

73 of 100

234 PU_2015_394
Consider the following statements:

1. Recursive languages are closed under complementation
2. Recursively enumerable languages are closed under union
3. Recursively enumerable languages are closed under complementation

Which of the above statements are true?

- 1 and 2
- 1 only
- 2 and 3
- 1 and 2 and 3

74 of 100

243 PU_2015_394
CPU scheduling algorithm determines an order for the execution of its scheduled processes.
Given n processes to be scheduled on one processor, how many possible different Schedules are there?
Give a formula in terms of n.

- *n*/2
- *n*! (*n* factorial = *n* _ *n*- 1 _ *n* - 2 _ … _ 2 _ 1)
- log*n*
- *n*+1

75 of 100

233 PU_2015_394
Which of the following is not a part of LL(1) parsing?

- Pointers
- Queue
- Input buffer
- Stack

76 of 100

259 PU_2015_394
Choose the correct statement.

- Non zero value represents a false condition
- 1 represents a false condition
- Anything that is not 1, represents a false condition
- 0 represents a false condition

77 of 100

224 PU_2015_394
Given the grammar:

S → aSa, S → bSb, S → b, S → a. S → ε

Which of the following strings is NOT a valid sentence of the grammar?

- baabaab
- abbbbbbbbbbbba
- abbaabb
- bababababab

78 of 100

220 PU_2015_394
LR(k) grammar:-

- Can only examine a maximum of k input symbols
- Covers the LL(k) class
- Defines handles of length k input symbols
- Can be used to identify the production associated with a handle

79 of 100

256 PU_2015_394
How many tokens are in the:

if (age==2)

- 4
- 7
- 6
- 5

80 of 100

253 PU_2015_394
Which of the following file format supports in windows 7?

- EXT
- WFS
- NTFS
- BSD

81 of 100

275 PU_2015_394
Which of the following statements are TRUE?

1. The problem of determining whether there exists a cycle in an undirected graph is in P.

2. The problem of determining whether there exists a cycle in an undirected graph is NP.
3. If a problem A is NP complete, there exists a non-deterministic time algorithm to solve A.

- 1 and 3 only
- 1, 2 and 3
- 2 and 3 only
- 1 and 2 only

82 of 100

284 PU_2015_394
While inserting the elements 71, 65, 84, 69, 83 in an empty binary search tree(BST) in the sequence shown, the element in the lowest level is:-

- 69
- 83
- 65
- 67

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286 PU_2015_394
A problem L is NP-complete if L is NP-hard and:-

- L ε NP
- L α NP
- L ≈ NP
- L = NP

84 of 100

285 PU_2015_394
Consider the following array of elements.

(89, 19, 50, 17, 12, 15, 2, 5, 7, 11, 6, 9, 100)

The minimum number of interchanges needed to convert it into a max-heap is:-

- 5
- 2
- 3
- 4

85 of 100

261 PU_2015_394
A function contained within the class is called:-

- Friend
- Generic

- Virtual
- Inline

86 of 100

260 PU_2015_394

Classes are useful because they:-

- Permit data to be hidden from other classes
- Can closely model objects in the real world
- Bring together all aspects of an entity in one place
- Are removed from memory when not in use

87 of 100

296 PU_2015_394

If A, B and C are the attributes of a relation schema R, which one of the following is the transitive functional dependency?

- A determines B, B determines C and A determines C
- A determines B and C determines A
- A determines C and C determines B
- A determines B and B determines A

88 of 100

287 PU_2015_394

What would be the cost value for any answering node of a sub tree with root 'r' using branch-bound algorithm?

- Average
- Optimal
- Minimum
- Maximum

89 of 100

274 PU_2015_394

Consider list recursive algorithms and list recurrence relations as shown below. Each recurrence relation corresponds to exactly one algorithm and is used to derive the time complexity of the algorithm.

Recursive Algorithm	Recurrence Relation
P. Binary Search	1. $T(n) = T(n-k) + T(k) + c\,n$
Q. Merge Sort	2. $T(n) = 2T(n-1) + 1$
R. Quick Sort	3. $T(n) = 2T(n/2) + c\,n$
S. Tower of Hanoi	4. $T(n) = T(n/2) + 1$

Which of the following is correct match between the algorithms and their recurrence relations?

- P - 4, Q - 2, R - 1, S - 3
- P - 3, Q - 2, R - 4, S - 1
- P - 4, Q - 3, R - 1, S - 2
- P - 2, Q - 3, R - 4, S - 1

90 of 100

278 PU_2015_394

If f(n) = n!, g(n) = 2 n h(n) = n (log 2 n), which of the following is true?

- f(n) = O(g(n)) , g(n) = O(h(n))
- g(n) = O(f(n)), h(n) = O(f(n))
- h(n) = O(f(n), g(n) = Ω(f(n))
- f(n) = Ω(g(n) , g(n) = O(h(n))

91 of 100

276 PU_2015_394

Let T be a depth first search tree in an undirected graph G. Vertices u and v are leaves of this tree T. The degrees of both u and v are at least 2. Which one of following statements is true?

- There must be exists of a cycle in G containing u and v
- There must exist a vertex w whose removal disconnects u and v in G
- There must exist a cycle in G containing u and its neighbor in G
- There must exists a vertex w adjacent to both u and v in G

92 of 100

266 PU_2015_394

Expand the acronym AWT.

- Absolutely Wonderful Toolkit
- A Web Toolkit
- Application With Types
- Abstract Windowing Toolkit

93 of 100

277 PU_2015_394

The depth first traversal of a graph G with n vertices, k edges is marked as tree edges. The number of connected components in G is:-

- n - k
- k + 1
- k
- n - k - 1

94 of 100

288 PU_2015_394
Which design strategy stops the execution when it finds the solution otherwise starts the problem from top?

- Back tracking
- Branch and bound
- Dynamic programming
- Divide and conquer

95 of 100

272 PU_2015_394
The height of tree is the length of the longest root-to-leaf path in it. The maximum and minimum number of nodes in a binary tree of height 5 are:-

- 31 and 5, respectively
- 32 and 6, respectively
- 63 and 6, respectively
- 64 and 5, respectively

96 of 100

273 PU_2015_394
Consider a max heap, represented by the array: 40,30,20,10,15,16,17,8,4.

Array Index	1	2	3	4	5	6	7	8	9
Value	40	30	20	10	15	16	17	8	4

Now consider that a value 35 is inserted into this heap. After insertion, the new heap is:-

- 40,35,20,10,30,16,17,8,4,15
- 40,30,20,10,15,16,17,8,4,35
- 40,30,20,10,35,16,17,8,4,15
- 40,35,20,10,15,16,17,8,4,30

97 of 100

297 PU_2015_394
OLTP stands for:-

- Online Transaction Processing
- Oracle Language Transaction Processing
- Oracle Lossless Transaction Processing
- Open Language Transaction Processing

98 of 100

295 PU_2015_394

Kerning of fonts refers to the:-

- Spacing of a group of characters
- Spacing between two individual characters
- Underlining of letters
- Substitution of fonts in a web page

99 of 100

283 PU_2015_394

The result evaluating the postfix expression `10 5 + 60 6 / * 8 -` is:-

- 213
- 71
- 284
- 142

100 of 100

267 PU_2015_394

Which is a reserved word in the Java programming language?

- Array
- Native
- Method
- Subclass