Andhra Pradesh State Council of Higher Education

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Computer Science and Information Technology (CS)

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Computer Science and Information Technology (CS)

Section Id :	29996531
Section Number :	1
Mandatory or Optional :	Mandatory
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Display Number Panel :	Yes
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Mark As Answered Required? :	Yes
Sub-Section Number :	1
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Question Shuffling Allowed :	Yes

Question Number : 1 Question Id : 2999653601 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

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A variable X has the probability distribution

x	–1	1	2
P(X=x)	1/6	1/2	1/3

Then $E(2X+1)^2$ is _____.

Options :

1. 71/9

2. 79/9

3. 73/9

4. 75/9

Question Number : 2 Question Id : 2999653602 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The product of the eigen values of the matrix $\begin{bmatrix} 3 & 1 & 4 \\ 0 & 2 & 6 \\ 0 & 0 & 5 \end{bmatrix}$ is_____.

Options :

1. 60

2. 10

3. 15

4. 30

Question Number : 3 Question Id : 2999653603 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Let $`\circ'$ be a binary operation on $\mathbb{Z}$, defined as $a \circ b = a + b - ab,\ \forall\ a, b \in \mathbb{Z}$.

Then the unity element (or identity element) in $\mathbb{Z}$ with respect to the operation $`\circ'$ is_____.

Options :

1. 2

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2. 1

3. 0

4. does not exist

Question Number : 4 Question Id : 2999653604 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

In any lattice L, $(((a \wedge b) \vee a) \wedge b) =$ _____.

Options :

1. $a \vee b$

2. $a \wedge b$

3. $(a \wedge b) \vee a$

4. $((a \vee b) \wedge a) \vee b$

Question Number : 5 Question Id : 2999653605 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

In a lottery, m tickets are drawn at a time out of n tickets numbered from 1 to n. What is the expected value of the sum of the numbers on the tickets drawn?

Options :

1. $m(n+1)$

2. $\frac{1}{2} n(m-1)$

3. $n(m+1)$

4. $\frac{1}{2} m(n+1)$

Question Number : 6 Question Id : 2999653606 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

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The recurrence relation that determines the sequence $7, \frac{14}{5}, \frac{28}{25}, \frac{56}{125}, \cdots$ is _____.

Options :

1. $2a_n - 5a_{n-1} = 0, a_0 = 7$

2. $a_n = a_{n-1} - \frac{2}{5}, a_0 = 7$

3. $a_n = a_{n-1} + \frac{2}{5}, a_0 = 7$

4. $5a_n - 2a_{n-1} = 0$

Question Number : 7 Question Id : 2999653607 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Let A and B be two real $n \times n$ matrices such that A and B are similar. Let 5 be an eigenvalue of A. Which of the following statement is always true?

Options :

1. 5 is an eigenvalue of B

2. 5 is an eigenvalue of B^3

3. 5 is an eigenvalue of B^2

4. 5 is an eigenvalue of B^{-1}

Question Number : 8 Question Id : 2999653608 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Given dy/dx=y – x, with y(0)=2, Find the value of y(0.1)?

Options :

1. 2.205

2. 2.206

3. 2.204

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4. 2.202

Question Number : 9 Question Id : 2999653609 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The order of convergence of the Newton-Raphson method is ____.

Options :

1. 0

2. 1

3. 2

4. 3

Question Number : 10 Question Id : 2999653610 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The value of the integral $\frac{1}{2}\int_0^4 x\,[x]dx$ where $[x]$ denotes the integer part of x is_____.

Options :

1. 0

2. 12

3. 15/2

4. 17/2

Question Number : 11 Question Id : 2999653611 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Let G be a simple connected planar graph with 13 vertices and 19 edges. Then the number of faces in the planar embedding of the graph is _____.

Options :

1. 0

2. 8

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3. 9

4. 13

Question Number : 12 Question Id : 2999653612 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

What are the maximum number of Boolean functions involving N Boolean variables?

Options :

1. N^2

2. 2^N

3. 2^{2N}

4. 2

Question Number : 13 Question Id : 2999653613 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

A Complete graph G can have _____ spanning trees.

Options :

1. $n^{(n-1)}$

2. $n^{(n-k)}$

3. $n^{(n-2)}$

4. n^n

Question Number : 14 Question Id : 2999653614 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The minimum number of D flip flops needed to design a mod-258 counter is _____.

Options :

1. 9

2. 8

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3. 512

4. 258

Question Number : 15 Question Id : 2999653615 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

What is the base (or radix) of the number system such that the following equation 312/20 = 13.1 holds is?

Options :

1. 2

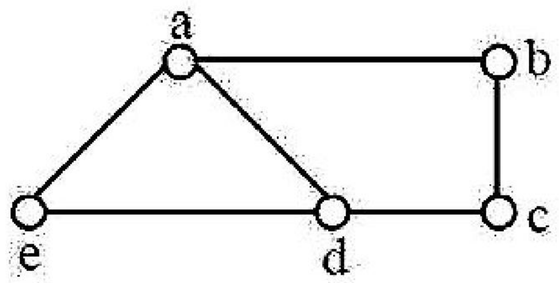
2. 3

3. 4

4. 5

Question Number : 16 Question Id : 2999653616 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

What is the circuit rank of the following graph?



Options :

1. 1

2. 2

3. 3

4. 4

Question Number : 17 Question Id : 2999653617 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

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Let G be an arbitrary graph with n nodes and k components. If a vertex is removed from G, the number of components in the resultant graph must necessarily lie between _____ and _____.

Options :

1. k, n

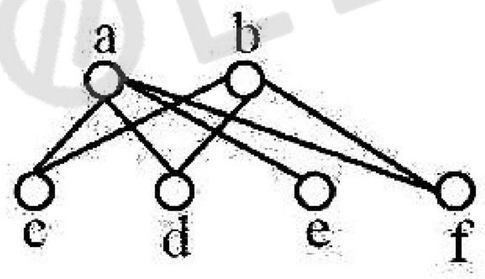
2. $k-1, k+1$

3. $k-1, n-1$

4. $k+1, n-k$

Question Number : 18 Question Id : 2999653618 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The chromatic number of the following graph is _____.



Options :

1. 2

2. 4

3. 5

4. 6

Question Number : 19 Question Id : 2999653619 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

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Consider the following statements.

Statement 1: Sun rises in the east or $2 + 3 = 7$

Statement 2: Sun does not rise in the east

Based on the above two statements, which of the following logical Inference is valid?

Options :

1. Sun rises in the east

2. $2 + 3 = 7$

3. $2 + 3 \neq 7$

4. Sun rises in the east and $2 + 3 = 5$

Question Number : 20 Question Id : 2999653620 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

On a purely syntactic basis, which one of the following is used to demonstrate that one formula is a logical consequence of another formula?

Options :

1. Deductive system

2. Inductive systems

3. Reasoning with Knowledge Based System

4. Search Based System

Question Number : 21 Question Id : 2999653621 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

What is the number of vertices in an undirected connected graph with 27 edges, 6 vertices of degree 2, 3 vertices of degree 4 and remaining of degree 3?

Options :

1. 10

2. 11

3. 18

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4. 19

Question Number : 22 Question Id : 2999653622 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Let # be a binary operator defined as $X \# Y = X' + Y'$ where X and Y are Boolean variables. Consider the following two statements.

S1: $(P \# Q) \# R = P \# (Q \# R)$
S2: $Q \# R = R \# Q$

Which of the following is/are true for the Boolean variables P, Q and R?

Options :

1. Only S1 is True

2. Only S2 is True

3. Both S1 and S2 are True

4. Neither S1 nor S2 are True

Question Number : 23 Question Id : 2999653623 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Which one of the following Boolean expressions is NOT a tautology?

A) $((a \rightarrow b) \wedge (b \rightarrow c)) \rightarrow (a \rightarrow c)$

B) $(a \leftrightarrow b) \rightarrow (\sim b \rightarrow (a \wedge c))$

C) $(a \wedge b \wedge c) \rightarrow (c \vee a)$

D) $a \rightarrow (b \rightarrow a)$

Options :

1. A

2. B

3. C

4. D

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Question Number : 24 Question Id : 2999653624 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

A connected planar graph G with n vertices and m edges has exactly _____ regions.

Options :

1. m+n-2

2. m-n-2

3. m-n+2

4. m+n+2

Question Number : 25 Question Id : 2999653625 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Which of the following predicate expressions can be used to represent the statement:

"None of the available rooms are suitable for a seminar hall."

Options :

1. $\exists x \exists y(\text{Available}(x) \wedge \sim \text{Suitable}(y))$

2. $\sim \exists x \forall y(\text{Available}(x) \wedge \text{Suitable}(y))$

3. $\sim \forall x(\text{Available}(x) \wedge \text{Suitable}(x))$

4. $\sim \exists x(\text{Available}(x) \wedge \text{Suitable}(x))$

Question Number : 26 Question Id : 2999653626 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

How many 32K *1 RAM chips are needed to provide a memory capacity of 256 Kb?

Options :

1. 8

2. 32

3. 64

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4. 128

Question Number : 27 Question Id : 2999653627 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The maximum gate delay for any output to appear in an array multiplier for multiplying two n bit number is _____.

Options :

1. $O(n^2)$

2. $O(n)$

3. $O(\log n)$

4. $O(1)$

Question Number : 28 Question Id : 2999653628 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Register renaming is done in pipelined processors _____.

Options :

1. as an alternative to register allocation at compile time

2. for efficient access to function parameters and local variables

3. to handle certain kinds of hazards

4. as part of address translation

Question Number : 29 Question Id : 2999653629 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

In which addressing mode, the effective address of the operand is generated by adding a constant value to the content of a register?

Options :

1. Absolute mode

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2. Indirect mode

3. Immediate mode

4. Index mode

Question Number : 30 Question Id : 2999653630 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

What is the addressing mode which uses PC instead of other registers?

Options :

1. Direct mode

2. Indirect mode

3. Relative mode

4. Indexed mode

Question Number : 31 Question Id : 2999653631 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

A micro-programmed control unit _____.

Options :

1. is faster than a hard-wired control unit

2. facilitates easy implementation of new instructions

3. is useful when very small programs are to be run

4. usually refers to the control unit of a microprocessor

Question Number : 32 Question Id : 2999653632 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The instruction execution flow in the pipeline processor is represented by_____.

Options :

1. reservation table

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2. data flow diagram

3. time space diagram

4. flowchart

Question Number : 33 Question Id : 2999653633 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Consider the following Boolean function of four variables

$$f(w,x,y,z) = \sum(1,3,4,6,9,11,12,14)$$

The function is _____.

Options :

1. independent of one variables

2. independent of two variables

3. independent of three variables

4. dependent on all the variables

Question Number : 34 Question Id : 2999653634 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

How many 3-to-8 line decoders with an enable input are needed to construct a 6-to-64 line decoder without using any other logic gates?

Options :

1. 7

2. 8

3. 9

4. 10

Question Number : 35 Question Id : 2999653635 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

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What is the minimum number of NAND gates required to implement a 2-input EXCLUSIVE-OR function without using any other logic gate?

Options :

1. 3

2. 4

3. 5

4. 6

Question Number : 36 Question Id : 2999653636 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The numbers 1,2.....,n are inserted in a binary search tree in some order. In the resulting tree, the right subtree of the root contains p nodes. The first number to be inserted in the tree must be _____.

Options :

1. p

2. $p+1$

3. $n-p$

4. $n-p+1$

Question Number : 37 Question Id : 2999653637 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The time complexity for evaluating a given postfix expression is _____.

Options :

1. $O(n)$

2. $O(n \log n)$

3. $O(\log n)$

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4. $O(n^2)$

Question Number : 38 Question Id : 2999653638 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Consider the following program segment:

```
i=6720; j=4
while ((i % j) ==0)
{
        i=i/j;
        j=j+1;
}
```

On termination, the value of j will be _____.

Options :

1. 4

2. 8

3. 9

4. 6720

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Question Number : 39 Question Id : 2999653639 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

To implement Dijkstra's shortest path algorithm on unweighted graphs so that it runs in linear time, the data structure to be used is _____.

Options :

1. Queue

2. Stack

3. Heap

4. B-tree

Question Number : 40 Question Id : 2999653640 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

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The running time of Bellman Ford algorithm is _____where V, E are vertices and edges respectively.

Options :

1. $O(V^2)$

2. $O(V)$

3. $O(V E)$

4. $O(V+E \log_2 V)$

Question Number : 41 Question Id : 2999653641 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The time complexity of an algorithm T (n), where n is the input size is given by

$$T(n) = T(n-1) + 1/n, \text{ if } n>1$$
$$= 1, \text{ otherwise}$$

The order of the algorithm is _____.

Options :

1. $\log n$

2. n

3. n^2

4. n^n

Question Number : 42 Question Id : 2999653642 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

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What is the output of the following C program?

```
#include<stdio.h>
void main()
{       int x = 6;
        int y = 6.3;
        if(x == y)
        printf("x and y are not equal");
        else
        printf("x and y are equal");
}
```

Options :

1. x and y are equal

2. x and y are not equal

3. Compilation error

4. No output

Question Number : 43 Question Id : 2999653643 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The following expression in C language * (x+i) denotes the value of _____.

Options :

1. x + i

2. x * i

3. &x[i]

4. x[i]

Question Number : 44 Question Id : 2999653644 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

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What is the output of the following C code?

```
void main ( )
{
    int y, x = 15;
    y = (x << 1);
    printf ("x = %d,  y = %d", x, y);
}
```

Options :

1. x = 15, y = 30

2. x = 30, y = 30

3. x = 30, y = 15

4. x = 15, y = 15

Question Number : 45 Question Id : 2999653645 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Consider the following recursive function:

```
int fun (int num)
{
    if(num = = 0)
    return 0;
    else
    return ((num%10) + fun (num/10));
}
```

What value will be returned by the function call fun (123)?

Options :

1. 123

2. 321

3. 6

4. 5

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Question Number : 46 Question Id : 2999653646 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Consider the following code.

```
int fun (int a, int * b);
int main ( )
{
        int x = 10, y = 20, r;
        r = fun (x, &y);
        printf("r = % d\n", r);
}
int fun (int a, int * b)
{
        return (a + * b);
}
```

Options :

1. 10

2. 20

3. 30

4. Garbage value

Question Number : 47 Question Id : 2999653647 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

What would be the output of the following C program?

```
#include<stdio.h>
int main()
{
   int iVar1 = 6, iVar2 = 5;
   iVar1 = iVar2 + NULL;
   printf("Value of iVar1 is %d", iVar1);
   return 0;
}
```

Options :

1. Compilation error, hence no output

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2. Runtime error, hence no output

3. 5

4. 6

Question Number : 48 Question Id : 2999653648 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The compiler will give an error if we attempt to get the address of a variable with _____ storage class.

Options :

1. register keyword

2. extern keyword

3. static keyword

4. auto keyword

Question Number : 49 Question Id : 2999653649 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

What would be the output of the following C program?

```
#include<stdio.h>
int main()
{
   int iCount = 0;
   for (; iCount <=10; iCount++);
      printf("%d",iCount);
   return 0;
}
```

Options :

1. 1 2 3 4 5 6 7 8 9 10

2. 10

3. 11

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4. Compilation error, hence no output

Question Number : 50 Question Id : 2999653650 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The number of swappings needed to sort the numbers 8, 22, 7, 9, 31, 19, 5, 13 in ascending order, using bubble sort is_____.

Options :

1. 11

2. 12

3. 13

4. 14

Question Number : 51 Question Id : 2999653651 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Which of the following regular expressions over {0, 1} denotes the set of all strings not containing 100 as a sub-string?

Options :

1. 0* (1+ 0)*

2. 0*1010*

3. 0*1*01

4. 0*(10 + 1)*

Question Number : 52 Question Id : 2999653652 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The language $\{ a^m b^n c^{m+n} \ / \ m, n \geq 1 \}$ is _____.

Options :

1. regular

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2. context free but not regular

3. context sensitive but not context free

4. type-0 but not context sensitive

Question Number : 53 Question Id : 2999653653 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Consider the grammar G:

$S \rightarrow AB$

$A \rightarrow aAA/\in$

$B \rightarrow bBB/\in$

What are the nullable symbol in the given grammar?

Options :

1. A, B, S

2. A and B

3. B

4. A

Question Number : 54 Question Id : 2999653654 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Which of the following problems is undecidable ?

Options :

1. Deciding if a given context free grammar is ambiguous.

2. Deciding if a given string is generated by a given context free grammar.

3. Deciding if the language generated by a given context free grammar is empty.

4. Deciding if the language generated by a given context free grammar is finite.

Question Number : 55 Question Id : 2999653655 Question Type : MCQ Display Question Number : Yes Is Question

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Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The set of all strings over {0,1} starting with 00 and ending with 11 is _____.

Options :

1. 0011

2. 00(0+1)*11

3. (00)*(11)*

4. 0*1*

Question Number : 56 Question Id : 2999653656 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The set of strings ending in 1 and not containing 000 is represented by which of the following regular expression?

Options :

1. (00 + 11)(0 + 1)*(00 + 11)

2. [(00 + 11)(0 + 1) + 1] + [(0 + 1) + (00 + 11)]

3. (1 + 01 + 001)*

4. [(00(0 + 1) * 11] + [11(0 + 1) * 00]

Question Number : 57 Question Id : 2999653657 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Which of the following statements is true?

Options :

1. Each context free language is accepted by some push down automation.

2. The intersection of a context free languages with a regular language is not a context free language.

3. The intersection of two context free languages is context free.

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4. The complement of a context free language is context free.

Question Number : 58 Question Id : 2999653658 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Among the following conversions, _____ conversion is not possible algorithmically.

Options :

1. non-deterministic FSA to deterministic FSA

2. non-deterministic PDA to deterministic PDA

3. regular grammar to context free grammar

4. non-deterministic Turing machine to deterministic Turing machine

Question Number : 59 Question Id : 2999653659 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Which of the following is true for the language $\{a^p | p \text{ is prime}\}$?

Options :

1. It is not accepted by a Turing Machine

2. It is regular but not context-free

3. It is context-free but not regular

4. It is neither regular nor context-free, but accepted by a Turing machine

Question Number : 60 Question Id : 2999653660 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Which one of the following languages over the alphabet {0, 1} is described by the regular expression: (0+1)*0(0+1)*0(0+1)*?

Options :

1. The set of all strings containing the substring 00.

2. The set of all strings containing at most two 0's.

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3. The set of all strings containing at least two 0's.

4. The set of all strings that begin and end with either 0 or 1.

Question Number : 61 Question Id : 2999653661 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

A Syntax Directed Definition is _____.

Options :

1. a set of inherited and synthesized attributes

2. a CFG with attributes and rules

3. a syntax tree with semantics

4. an annotated parse tree

Question Number : 62 Question Id : 2999653662 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Three address code involves _____.

Options :

1. exactly 3 addresses

2. search trees

3. hash tables

4. self-organization lists

Question Number : 63 Question Id : 2999653663 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

If w is a string of terminals and A, B are the non-terminals, then which of the following are right linear grammars?

Options :

1. $A \rightarrow Bw$

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2. $A \rightarrow Bw \mid w$

3. $A \rightarrow wB \mid w$

4. $A \rightarrow Bw$ and $A \rightarrow Bw \mid w$

Question Number : 64 Question Id : 2999653664 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The minimum number of states of DFA accepting the language

L = {W | W $\in$ {0,1}*, number 0's are divisible by 4 and number of 1's are divisible by 5 respectively }

has _____ states.

Options :

1. 4

2. 5

3. 9

4. 20

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Question Number : 65 Question Id : 2999653665 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The grammar $S \rightarrow aSa \mid bS \mid c$ is?

Options :

1. LL(1) but not LR(1)

2. LR(1) but not LL(1)

3. Both LL(1) and LR(1)

4. Neither LL(1) nor LR(1)

Question Number : 66 Question Id : 2999653666 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

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The process of recognizing and evaluating constant expressions at compile time rather than computing them at runtime is called _____.

Options :

1. constant folding

2. copy propagation

3. reduction in strength

4. dynamic folding

Question Number : 67 Question Id : 2999653667 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

For a given grammar, the number of states in SLR are _____ the states of LALR

Options :

1. more than

2. less than

3. equal to

4. in no relation to

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Question Number : 68 Question Id : 2999653668 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

In the context of abstract-syntax-tree (AST) and control-flow-graph (CFG), which one of the following is True?

Options :

1. In both AST and CFG, let node N2 be the successor of node N1. In the input program, the code corresponding to N2 is present after the code corresponding to N1

2. For any input program, neither AST nor CFG will contain a cycle

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3. The maximum number of successors of a node in an AST and a CFG depends on the input program

4. Each node in AST and CFG corresponds to at most one statement in the input program

Question Number : 69 Question Id : 2999653669 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Consider the following grammar

S –> AB
A –> a
A –> BaB
B –> bbA

Which of the following statements is FALSE?

Options :

1. The length of every string produced by this grammar is even

2. No string produced by this grammar has three consecutive a's

3. The length of substring produced by B is always odd

4. No string produced by this grammar has four consecutive b's

Question Number : 70 Question Id : 2999653670 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Given the following grammars G1 and G2 as

G1: $S \rightarrow AB|aaB$
$A \rightarrow aA \mid \in$
$B \rightarrow bB \mid \in$

G2: $S \rightarrow A|B$
$A \rightarrow aAb \mid ab$
$B \rightarrow abB \mid \in$

Which of the following is correct?

Options :

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1. G1 is ambiguous and G2 is unambiguous grammars

2. G1 is unambiguous and G2 is ambiguous grammars

3. both G1 and G2 are ambiguous grammars

4. both G1 and G2 are unambiguous grammars

Question Number : 71 Question Id : 2999653671 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

A critical segment in a program is _____.

Options :

1. which should run in a certain specified amount of time

2. which avoid deadlocks

3. which must be enclosed with a pair of semaphore operations P and V

4. where shared resources are accessed

Question Number : 72 Question Id : 2999653672 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

A system uses FIFO policy for page replacement. It has 4-page frames with no pages loaded to begin with. The system first accesses 100 distinct pages in same order and then accesses the same 100 pages but now in the reverse order. How many page faults will occur?

Options :

1. 196

2. 192

3. 197

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4. 195

Question Number : 73 Question Id : 2999653673 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

In a time sharing operating system, when the time slot given to a process is completed, the process goes from RUNNING state to the _____ state.

Options :

1. BLOCKED

2. READY

3. SUSPENDED

4. TERMINATED

Question Number : 74 Question Id : 2999653674 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

A system program that combines all the separately complied modules of a program into a form suitable for execution is _____.

Options :

1. assembler

2. linking loader

3. cross complier

4. two pass assembler

Question Number : 75 Question Id : 2999653675 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

A _____ is a process that uses the spawn mechanism to ravage system performance.

Options :

1. Virus

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2. Logic bomb

3. Worm

4. Threat

Question Number : 76 Question Id : 2999653676 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

What type of operating system contains network of processors?

Options :

1. Real Time OS

2. Batch OS

3. Distributed OS

4. Time sharing OS

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Question Number : 77 Question Id : 2999653677 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The correct matching for the following pairs is _____.

a) Disk scheduling	i) Round robin
b) Batch processing	ii) SCAN
c) Time sharing	iii) LIFO
d) Interrupt processing	iv) FIFO

Options :

1. (a-iii), (b-iv), (c-ii) and (d-i)

2. (a-iv), (b-iii), (c-ii) and (d-i)

3. (a-ii), (b-iv), (c-i) and (d-iii)

4. (a-i), (b-iv), (c-iii) and (d-ii)

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Question Number : 78 Question Id : 2999653678 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

An operating system uses Shortest Remaining Time first (SRT) process scheduling algorithm. Consider the arrival times and execution times for the following processes:

Process	Execution time	Arrival time
P1	20	0
P2	25	10
P3	10	30
P4	15	45

What is the total waiting time for process P2?

Options :

1. 5

2. 15

3. 40

4. 55

Question Number : 79 Question Id : 2999653679 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

A special purpose register that is set to the highest address occupied by the OS code is _____.

Options :

1. fence register

2. general purpose register

3. protection register

4. control register

Question Number : 80 Question Id : 2999653680 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

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The process of assigning load addresses to the various parts of the program and adjusting the code and data in the program to reflect the assigned addresses is called_____.

Options :

1. Assembly

2. Parsing

3. Relocation

4. Symbol resolution

Question Number : 81 Question Id : 2999653681 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

In a B tree file organization, the highest number of items can be placed in leaf node is_____.

Options :

1. n/2

2. (n-1)/2

3. n-1

4. n

Question Number : 82 Question Id : 2999653682 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Assume transaction A holds a shared lock R. If transaction B also requests for a shared lock on R, it will_____.

Options :

1. result in deadlock situation

2. immediately be granted

3. immediately be rejected

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4. be granted as soon as it is released by A

Question Number : 83 Question Id : 2999653683 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

A trigger is _____.

Options :

1. a statement that enables to start any DBMS

2. a statement that is executed by the user when debugging an application program

3. a condition, the system tests for the validity of the database user

4. a statement that is executed automatically by the system as a side effect of a modification to the database

Question Number : 84 Question Id : 2999653684 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Which of the following are the five built-in functions provided by SQL?

Options :

1. sum, avg, mult, div, min

2. sum, avg, min, max, mult

3. count, sum, avg, max, min

4. sum, avg, min, max, name

Question Number : 85 Question Id : 2999653685 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

If the same entity sets, participate in relationship set with different roles, then it is called _____.

Options :

1. iterative relationship set

2. recursive relationship set

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3. degenerative relationship set

4. overlapped relationship set

Question Number : 86 Question Id : 2999653686 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Tree based locking protocol ensures _____.

Options :

1. conflict and view serializability

2. conflict serializability and freedom from deadlock

3. freedom from deadlock and recoverability

4. recoverability and conflict serializability

Question Number : 87 Question Id : 2999653687 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The closed hashing method is also known as _____.

Options :

1. overflow chaining

2. linear probing

3. underflow chaining

4. dual probing

Question Number : 88 Question Id : 2999653688 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The number of maximum child nodes that a B-tree of order 'm' can have are_____.

Options :

1. m

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2. m+1

3. m-1

4. m/2

Question Number : 89 Question Id : 2999653689 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

A binary search tree is generated by inserting the following integers

50, 15, 62, 5, 20, 58, 91, 3, 8, 37, 60, 24 in that order. Then the number of nodes in the left subtree and right subtree of the root respectively are _____.

Options :

1. (4, 7)

2. (7, 4)

3. (8, 3)

4. (3, 8)

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Question Number : 90 Question Id : 2999653690 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

NULL is _____.

Options :

1. the same as 0 for integer

2. the same as blank for character

3. the same as 0 for integer and blank for character

4. not a value

Question Number : 91 Question Id : 2999653691 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

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Project risk factor is considered in_____.

Options :

1. waterfall model

2. prototyping model

3. spiral model

4. iterative enhancement model

Question Number : 92 Question Id : 2999653692 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Which is not a non-functional requirement among the following?

Options :

1. Efficiency

2. Reliability

3. Product features

4. Stability

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Question Number : 93 Question Id : 2999653693 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

According to Brooks, if n is the number of programmers in a project team then the number of communication paths is _____.

Options :

1. n(n-1)/2

2. n log n

3. n

4. n(n+1)/2

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Question Number : 94 Question Id : 2999653694 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Regression testing is primarily related to _____.

Options :

1. function testing

2. data flow testing

3. development testing

4. maintenance testing

Question Number : 95 Question Id : 2999653695 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The normal form of a relation refers to the _____ normal form condition that it meets, and hence indicates the degree to which it has been normalized.

Options :

1. lowest

2. highest

3. abstract

4. virtual

Question Number : 96 Question Id : 2999653696 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

In which of the following method, the records are physically stored in a specified order according to a key field in each record?

Options :

1. Hierarchical

2. Direct

3. Sequential

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4. Hash

Question Number : 97 Question Id : 2999653697 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

If n_1 = number of distinct operators in a program
n_2 = number of distinct operands in a program
N = program length then program volume (V) can be calculated as

Options :

1. $V = N \log_2(n_1/n_2)$

2. $V = N \log_2(n_1 + n_2)$

3. $V = N \log_2(n_1 \cdot n_2)$

4. $V = ½ N \log_2(n_1 \cdot n_2)$

Question Number : 98 Question Id : 2999653698 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

_____ and _____ are the two issues of Requirement Analysis.

Options :

1. Performance, design

2. Stakeholder, developer

3. Functional, non-functional

4. Feasibility, traceability

Question Number : 99 Question Id : 2999653699 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

In system design and development field what does spaghetti code means?

Options :

1. Program written in machine code.

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2. Program that uses interpreter instead of compiler.

3. Program that has many GOTO statements.

4. Program where source codes are missing.

Question Number : 100 Question Id : 2999653700 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The approach used in top-down analysis and design is _____.

Options :

1. to identify the top level functions by combining many smaller components into a single entity

2. to prepare flow charts after programming has been completed

3. to identify a top level function and then create a hierarchy of lower-level modules and components.

4. to give more priority to the top level stake holders

Question Number : 101 Question Id : 2999653701 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

What is the PDU employed at the data link layer?

Options :

1. Bits

2. Frames

3. Packets

4. Segments

Question Number : 102 Question Id : 2999653702 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

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Checksum of 10101001001110 01 is _____.

Options :

1. 00001101

2. 11100001

3. 00011101

4. 11110001

Question Number : 103 Question Id : 2999653703 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Given an IP address 201.14.78.65 and the subnet mask 255.255.255.224. What is the subnet address?

Options :

1. 201.14.78.64

2. 20.14.78.65

3. 201.14.77.64

4. 201.14.77.66

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Question Number : 104 Question Id : 2999653704 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The hamming distance between 001111 and 010011 is _____.

Options :

1. 1

2. 2

3. 3

4. 4

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Question Number : 105 Question Id : 2999653705 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Which one of the following fields of an IP header is NOT modified by a typical IP router ?

Options :

1. Checksum

2. Source address

3. Time To Live

4. Length

Question Number : 106 Question Id : 2999653706 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Consider Subnet mask of class B network on the Internet is 255.255.240.0 then, what is the maximum number of hosts per subnets?

Options :

1. 4098

2. 4096

3. 4094

4. 4092

Question Number : 107 Question Id : 2999653707 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Match the followings between column A and column B.

A	B
i) NIC	M) Physical Layer
ii) Repeaters	N) Data Link Layer
iii) Router	O) Application Layer
iv) SMTP	P) Network Layer

Options :

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1. (i-N); (ii-O); (iii-P); (iv-M)

2. (i-N); (ii-M); (iii-P); (iv-O)

3. (i-N); (ii-P); (iii-M); (iv-O)

4. (i-O); (ii-P); (iii-M); (iv-N)

Question Number : 108 Question Id : 2999653708 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Which of the following is not true about User Datagram Protocol in transport layer?

Options :

1. Works well in unidirectional communication, suitable broadcast information.

2. It does three way handshake before sending datagrams.

3. It provides datagrams, suitable for modeling other protocols such as in IP tunneling.

4. The lack of retransmission delays makes it suitable for real-time applications.

Question Number : 109 Question Id : 2999653709 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Which of the following triggers a fast retransmission during the TCP congestion control?

Options :

1. 2nd Duplicate ACK

2. 3rd Duplicate ACK

3. 4th Duplicate ACK

4. Timeout

Question Number : 110 Question Id : 2999653710 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

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In the OSI model, as a data packet moves from the lower to the upper layers, headers are _____.

Options :

1. added
2. removed
3. rearranged
4. randomized

Question Number : 111 Question Id : 2999653711 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The wireless LAN specification _____ defined by IEEE, covers the data link and physical layers.

Options :

1. IEEE 1701
2. IEEE 802.11
3. IEEE 802.3
4. IEEE 754

Question Number : 112 Question Id : 2999653712 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

_____ uses two fiber-optic cables.

Options :

1. 100Base-TX
2. 100Base-FX
3. 100Base-T4
4. 100Base-VG

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Question Number : 113 Question Id : 2999653713 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Gigabit Ethernet has a data rate of _____bps.

Options :

1. 1000000000

2. 100000000

3. 1000000

4. 10000

Question Number : 114 Question Id : 2999653714 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Start of frame delimiter (SFD) is a one byte field which is always set to _____.

Options :

1. 11100011

2. 11001011

3. 11010101

4. 10101011

Question Number : 115 Question Id : 2999653715 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Transmission is called unicast when the _____.

Options :

1. least significant bit of an address's first octet is 0

2. least significant bit of an address's first octet is 1

3. most significant bit of an address's first octet is 0

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4. most significant bit of an address's first octet is 1

Question Number : 116 Question Id : 2999653716 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Which of the following allows hyperlinks to point to specific fragments of XML documents?

Options :

1. XPosition

2. XLink

3. XPath

4. XPointer

Question Number : 117 Question Id : 2999653717 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Number of S - boxes used in DES algorithm is _____.

Options :

1. 4

2. 8

3. 16

4. 32

Question Number : 118 Question Id : 2999653718 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Communication between browser and Web server takes place via _____.

Options :

1. GUI

2. HTTP

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3. ASP

4. JSP

Question Number : 119 Question Id : 2999653719 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Cell padding is a technique _____.

Options :

1. used to separate cell walls from their content

2. used to set space between cells

3. used to merge the cells

4. used to provide width to the cells

Question Number : 120 Question Id : 2999653720 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Which of the following XPath expression selects attributes?

Options :

1. .

2. ..

3. @

4. //

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