Telangana State Council Higher Education

Notations :

1.Options shown in green color and with ✔ icon are correct.

2.Options shown in red color and with ✖ icon are incorrect.

Question Paper Name :	Computer Science and Information Technology 3rd Aug 2022 Shift 2
Subject Name :	Computer Science and Information technology
Creation Date :	2022-08-03 18:09:59
Duration :	120
Total Marks :	120
Display Marks:	Yes
Calculator :	None
Magnifying Glass Required? :	No
Ruler Required? :	No
Eraser Required? :	No
Scratch Pad Required? :	No
Rough Sketch/Notepad Required? :	No
Protractor Required? :	No
Show Watermark on Console? :	Yes
Highlighter :	No
Auto Save on Console?	Yes
Change Font Color :	No
Change Background Color :	No
Change Theme :	No
Help Button :	No

Show Reports :	No
Show Progress Bar :	No

Computer Science and Information Technology

Group Number :	1
Group Id :	34058048
Group Maximum Duration :	0
Group Minimum Duration :	120
Show Attended Group? :	No
Edit Attended Group? :	No
Break time :	0
Group Marks :	120
Is this Group for Examiner? :	No
Examiner permission :	Cant View
Show Progress Bar? :	No

Mathematics

Section Id :	34058088
Section Number :	1
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	10
Number of Questions to be attempted :	10
Section Marks :	10
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Maximum Instruction Time :	0
Sub-Section Number :	1

Sub-Section Id : 34058088

Question Shuffling Allowed : Yes

Question Number : 1 Question Id : 3405805641 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

For the undirected graph, $1 \rightarrow 2$, $2 \rightarrow 3$, $3 \rightarrow 1$, $3 \rightarrow 4$, $4 \rightarrow 1$, the edge count is

Options :

34058022561. ✗ 2

34058022562. ✗ 3

34058022563. ✗ 4

34058022564. ✓ 5

Question Number : 2 Question Id : 3405805642 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Consider the group $(G, *)$, where $G = \mathbb{R} - (0)$ and $a * b = \frac{ab}{2}, \forall a, b \varepsilon \mathbb{R} - (0)$.

Then the solution of the equation $2 * x = 5 * 10 + 3 * (5x)$ is $x =$

Options :

34058022565. ✓ -50

34058022566. ✗ -40

34058022567. ✖ 50

34058022568. ✖ 40

Question Number : 3 Question Id : 3405805643 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If $a_n = n^2 + a_{n-1}$, for n = 1, 2, 3,..... with $a_0 = 0$, then $a_n = k\, n(n+1)(2n+1)$, where k =

Options :

34058022569. ✖ $\frac{1}{12}$

34058022570. ✔ $\frac{1}{6}$

34058022571. ✖ $\frac{1}{3}$

34058022572. ✖ $\frac{1}{2}$

Question Number : 4 Question Id : 3405805644 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The rank of the matrix $\begin{bmatrix} 1 & 2 & -5 \\ -1 & 0 & -1 \\ 2 & 1 & -1 \\ -1 & -2 & -3 \end{bmatrix}$ is

Options :

34058022573. ✖ 1

34058022574. ✖ 2

34058022575. ✔ 3

34058022576. ✖ 4

Question Number : 5 Question Id : 3405805645 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The number of solutions of the system: $x + y + z = 0$, $x - y + z = -2$, $2x + y + 2z = -1$, $x + 2y + z = 1$ is

Options :

34058022577. ✖ 1

34058022578. ✖ 2

34058022579. ✖ 3

34058022580. ✔ ∞

Question Number : 6 Question Id : 3405805646 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The number of independent rows in the matrix

$$\begin{pmatrix} 2 & 4 & -2 \\ 1 & 2 & -1 \\ 3 & 1 & 2 \\ 2 & -1 & 3 \\ 1 & 2 & -1 \end{pmatrix}$$ is

Options :

34058022581. ✖ 1

34058022582. ✔ 2

34058022583. ✖ 3

34058022584. ✖ 4

Question Number : 7 Question Id : 3405805647 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

$$\lim_{x \to 0^+} \frac{\cos(2x)-1}{x^7} =$$

Options :

34058022585. ✖ 1

34058022586. ✖ -1

34058022587. ✗ ∞

34058022588. ✓ $-\infty$

Question Number : 8 Question Id : 3405805648 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The function $f(x) = (x - x^2)e^{-x}$ attains its maximum at x =

Options :

34058022589. ✗ $\frac{3+\sqrt{5}}{2}$

34058022590. ✓ $\frac{3-\sqrt{5}}{2}$

34058022591. ✗ $\frac{3-2\sqrt{5}}{2}$

34058022592. ✗ $\frac{3+2\sqrt{5}}{2}$

Question Number : 9 Question Id : 3405805649 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The median of the data 25, 35, 10, 17, 29, 14, 21, 31, 30, 33, 54 is

Options :

34058022593. ✗ 31

34058022594. ✗ 30

34058022595. ✓ 29

34058022596. ✗ 28

Question Number : 10 Question Id : 3405805650 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Two fair dice are thrown. Then the probability that both the faces show different members, is

Options :

34058022597. ✓ $\frac{5}{6}$

34058022598. ✗ $\frac{2}{3}$

34058022599. ✗ $\frac{6}{7}$

34058022600. ✗ $\frac{1}{7}$

Computer Science and Information Technology

Section Id :	34058089
Section Number :	2
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	110
Number of Questions to be attempted :	110
Section Marks :	110
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	34058089
Question Shuffling Allowed :	Yes

Question Number : 11 Question Id : 3405805651 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

What is the largest 16-bit binary value that can be represented as an unsigned number

Options :

34058022601. ✖ 2^{15}

34058022602. ✖ 2^{16}

34058022603. ✖ $2^{15} - 1$

34058022604. ✔ $2^{16} - 1$

Question Number : 12 Question Id : 3405805652 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

For which of the following numbers, the two's complement of the number is the number itself

Options :

34058022605. ✔ 00000000

34058022606. ✘ 00000001

34058022607. ✘ 10000000

34058022608. ✘ 11111111

Question Number : 13 Question Id : 3405805653 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

What is the simplification of the following expression

$$F(X, Y, Z) = (X + Y)(X' + Y + Z)$$

Options :

34058022609. ✘ $F(X, Y, Z) = X + YZ$

34058022610. ✔ $F(X, Y, Z) = Y + XZ$

34058022611. ✘ $F(X, Y, Z) = Z + XY$

34058022612. ✖ $F(X, Y, Z) = X + Y + Z$

Question Number : 14 Question Id : 3405805654 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Simplify the following function where D is a don't care function

$F(W, X, Y, Z) = \Sigma(0, 1, 3, 5, 9, 11)$

$D(W, X, Y, Z) = \Sigma(2, 4, 8, 10)$

Options :

34058022613. ✖ $F(W,X,Y,Z) = X + W'Y'$

34058022614. ✖ $F(W,X,Y,Z) = X' + W'Y$

34058022615. ✖ $F(W,X,Y,Z) = X' + WY'$

34058022616. ✔ $F(W,X,Y,Z) = X' + W'Y'$

Question Number : 15 Question Id : 3405805655 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A four-variable logic function F(A,B,C,D) equals to 1 if input A is identical to input B and if input C is different from input D. Function F(A,B,C,D) can be written as

Options :

34058022617. ✖ $F(A,B,C,D) = \Sigma(4,7)$

34058022618. ✗ $F(A,B,C,D) = \Sigma(8,11)$

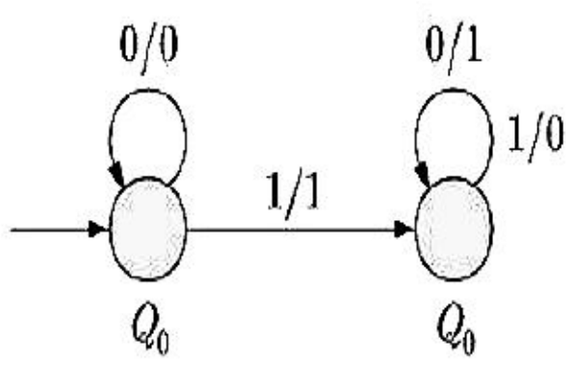
34058022619. ✓ $F(A,B,C,D) = \Pi(0,3,4,5,6,7,8,9,10,11,12,15)$

34058022620. ✗ $F(A,B,C,D) = \Pi(0,1,2,3,5,6,10,11,12,13,14,15)$

Question Number : 16 Question Id : 3405805656 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The following diagram represents a finite state machine which takes as input a binary number starting from the least significant bit. Which one of the following is TRUE



Options :

34058022621. ✗ It computes 1's complement of the input number

34058022622. ✓ It computes 2's complement of the input number

34058022623. ✗ It increments the input number

34058022624. ✗ It decrements the input number

Question Number : 17 Question Id : 3405805657 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The characteristic equation of a JK flip flop is

Options :

34058022625. ✗ $Q(next) = JQ + K'Q$

34058022626. ✗ $Q(next) = JQ' + K'Q'$

34058022627. ✗ $Q(next) = JQ' + KQ$

34058022628. ✓ $Q(next) = JQ' + K'Q$

Question Number : 18 Question Id : 3405805658 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

What is the minimum number of gates required to implement the Boolean function

(AB + C) if we have to use only 2-input NOR gates

Options :

34058022629. ✗ 2

34058022630. ✓ 3

34058022631. ✗ 4

34058022632. ✗ 5

Question Number : 19 Question Id : 3405805659 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

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

Options :

34058022633. ✖ 512

34058022634. ✖ 258

34058022635. ✔ 9

34058022636. ✖ 8

Question Number : 20 Question Id : 3405805660 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A digital computer has a memory unit with 32 bits per word. The instruction set consists of 350 different operations. All instructions have an operation code part (opcode) and an address part (allowing for only one address). Each instruction is stored in one word of memory. How many bits are needed for the opcode and how many bits are left for the address part of the instruction

Options :

34058022637. ✖ 7 for opcode and 25 for address part

34058022638. ✖ 8 for opcode and 24 for address part

34058022639. ✓ 9 for opcode and 23 for address part

34058022640. ✗ 10 for opcode and 22 for address part

Question Number : 21 Question Id : 3405805661 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A disk drive has 8 surfaces, each surface has 1024 tracks, each track has 64 sectors, and each sector can hold 512 bytes. What is the capacity of disk

Options :

34058022641. ✗ 2^{18} bytes

34058022642. ✗ 2^{19} bytes

34058022643. ✗ 2^{20} bytes

34058022644. ✓ 2^{28} bytes

Question Number : 22 Question Id : 3405805662 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If the virtual memory size is halved, the number of entries in the page table

Options :

34058022645. ✗ Increases by one

34058022646. ✗ Decreases by one

34058022647. ✓ Stays the same

34058022648. ✗ Doubles

Question Number : 23 Question Id : 3405805663 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The execution time which is used to measure performance includes

Options :

34058022649. ✗ Elapsed time for system

34058022650. ✗ CPU time taken by operating systems programs

34058022651. ✓ CPU time taken by user programs only

34058022652. ✗ CPU time taken by compiler programs only

Question Number : 24 Question Id : 3405805664 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A variable x with value 0x01234567 will be stored in four consecutive bytes, in little endian format as

Options :

34058022653. ✔ 67, 45, 23, 01

34058022654. ✖ 01, 23, 45, 67

34058022655. ✖ 67, 45, 01, 23

34058022656. ✖ 01, 23, 67, 45

Question Number : 25 Question Id : 3405805665 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The limiting factor in instruction level parallelism is

Options :

34058022657. ✖ Storage

34058022658. ✖ Memory Space

34058022659. ✖ CPU Resources

34058022660. ✔ Dependency

Question Number : 26 Question Id : 3405805666 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A CPU has 24-bit instructions. A program starts at address 300(in decimal). Which one of the following is a legal program counter (all values in decimal)

Options :

34058022661. ✗ 400

34058022662. ✗ 500

34058022663. ✓ 600

34058022664. ✗ 700

Question Number : 27 Question Id : 3405805667 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

How many 32K X 1 RAM chips are needed to provide a memory capacity of 256Kbytes

Options :

34058022665. ✗ 8

34058022666. ✗ 32

34058022667. ✓ 64

34058022668. ✗ 128

Question Number : 28 Question Id : 3405805668 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A CPU generally handles an interrupt by executing an interrupt service routine

Options :

34058022669. ✗ By checking the interrupt register at the end of the fetch cycle

34058022670. ✓ By checking the interrupt register after finishing the execution of the current instruction

34058022671. ✗ By checking the interrupt register at fixed time intervals

34058022672. ✗ As soon as an interrupt is raised

Question Number : 29 Question Id : 3405805669 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Suppose we have the following declaration in C:

int a[100];

Which of the following expressions does not represent a[20]

Options :

34058022673. ✗ *(a+20)

34058022674. ✗ *((&a[18])+2)

34058022675. ✓ *((&a[10])*2)

34058022676. ✗ *((&a[10*2]))

Question Number : 30 Question Id : 3405805670 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

What does the following C-program print

```
#include<stdio.h>
void main(){
char c[ ] = "ABCD2016";
char *p =c;
printf("%s ", p + p[3] - p[1]) ;
}
```

Options :

34058022677. ✗ AB2016

34058022678. ✗ ABCD

34058022679. ✓ CD2016

34058022680. ✗ 2016

Question Number : 31 Question Id : 3405805671 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

There is a tree where the left subtree contains 1000 nodes, and the right subtree contains 100 nodes. For preorder, inorder, and postorder traversals, how many nodes are processed before the root

Options :

34058022681. ✓ 0, 1000, 1100

34058022682. ✗ 0, 100, 1000

34058022683. ✗ 0, 1000, 100

34058022684. ✗ 0, 1100, 1000

Question Number : 32 Question Id : 3405805672 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Suppose that we have numbers between 1 and 1000 in a binary search tree and want to search for the number 363. Which of the following sequences could NOT be the sequence of nodes examined

Options :

34058022685. ✗ 2, 252, 401, 398, 330, 344, 397, 363

34058022686. ✗ 924, 220, 911, 244, 898, 258, 362, 363

34058022687. ✓ 925, 202, 911, 240, 912, 245, 363

34058022688. ✗ 925, 202, 911, 240, 910, 245, 363

Question Number : 33 Question Id : 3405805673 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Consider the following definition in C language

```
struct
{
        int data;
        struct node* next;
};
typedef struct node NODE;
NODE  *ptr;
```

Which of the following C statement is used to create a new node

Options :

34058022689. ✔ ptr = (NODE*)malloc(sizeof(NODE));

34058022690. ✘ ptr = (NODE*)malloc(NODE);

34058022691. ✘ ptr = (NODE*)malloc(sizeof(NODE*));

34058022692. ✘ ptr = (NODE)malloc(sizeof(NODE));

Question Number : 34 Question Id : 3405805674 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

What is the infix version of the following postfix expression

X 12 + Z 17 Y + 42 * / +

Options :

34058022693. ✗ (X + 12 + Z) / (17 + Y * 42)

34058022694. ✗ X + 12 + Z / 17 + Y * 42

34058022695. ✗ X + 12 + Z / (17 + Y) * 42

34058022696. ✓ X + 12 + Z / ((17 + Y) * 42)

Question Number : 35 Question Id : 3405805675 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which one of the following array represents a binary max-heap

Options :

34058022697. ✗ [25, 12, 16, 13, 10, 8, 14]

34058022698. ✗ [25, 14, 13, 16, 10, 8, 12]

34058022699. ✓ [25, 14, 16, 13, 10, 8, 12]

34058022700. ✗ [25, 14, 12, 13, 10, 8, 16]

Question Number : 36 Question Id : 3405805676 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time

: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Evaluate (00001000 & 11000101) ^ (11110000)

Options :

34058022701. ✗ 00000000

34058022702. ✗ 11111111

34058022703. ✗ 00001111

34058022704. ✓ 11110000

Question Number : 37 Question Id : 3405805677 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The initial configuration of a queue is a, b, c, d ('a' is in the front end). To get the configuration d, c, b, a, one needs a minimum of

Options :

34058022705. ✗ 2 deletions and 3 additions

34058022706. ✗ 3 deletions and 2 additions

34058022707. ✓ 3 deletions and 3 additions

34058022708. ✗ 3 deletions and 4 additions

Question Number : 38 Question Id : 3405805678 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

At most, how many comparisons are required to search a sorted vector of 1023 elements using the binary search algorithm

Options :

34058022709. ✓ 10

34058022710. ✗ 15

34058022711. ✗ 20

34058022712. ✗ 30

Question Number : 39 Question Id : 3405805679 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Suppose $T(n) = 2T(n/2) + n$, $T(0) = T(1) = 1$. Which one of the following is false

Options :

34058022713. ✗ $T(n) = O(n^2)$

34058022714. ✗ $T(n) = \Theta(nLogn)$

34058022715. ✗ $T(n) = O(nLogn)$

34058022716. ✓ $T(n) = \Omega(n^2)$

Question Number : 40 Question Id : 3405805680 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

What is the running time of the following code fragment

```
for(int i=0; i<10; i++)

for(int j=0; j<N; j++)

for(int k=N-2; k<N+2; k++)

    cout << i << " " << j << endl;
```

Options :

34058022717. ✔ $O(N)$

34058022718. ✘ $O(\log N)$

34058022719. ✘ $O(N \log N)$

34058022720. ✘ $O(N^2)$

Question Number : 41 Question Id : 3405805681 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following is useful in traversing a given graph by breadth first search

Options :

34058022721. ✘ Stack

34058022722. ✘ Set

34058022723. ✗ List

34058022724. ✓ Queue

Question Number : 42 Question Id : 3405805682 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following sorting algorithms has the lowest worst-case complexity

Options :

34058022725. ✗ Merge sort

34058022726. ✗ Bubble sort

34058022727. ✗ Quick sort

34058022728. ✓ Selection sort

Question Number : 43 Question Id : 3405805683 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The following keys are inserted in a hash table (in the given order) with 7 slots (indexed from 0 to 6) that using linear probing and hash function h(k) = k mod 7: 4, 11, 5, 12, 6

In which slot the key value 6 is stored

Options :

34058022729. ✓ 1

34058022730. ✖ 4

34058022731. ✖ 5

34058022732. ✖ 6

Question Number : 44 Question Id : 3405805684 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following statements about Dijkstra's algorithm is not true

Options :

34058022733. ✖ Dijkstra's algorithm is a greedy algorithm

34058022734. ✖ It is used to solve single-source shortest path problem for directed graphs

34058022735. ✖ It is used to solve single-source shortest path problem for undirected graphs

34058022736. ✔ It can be used on graphs with negative edge weight

Question Number : 45 Question Id : 3405805685 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The maximum number of trees that can be formed with three unlabeled nodes is

Options :

34058022737. ✖ 1

34058022738. ✓ 5

34058022739. ✗ 4

34058022740. ✗ 3

Question Number : 46 Question Id : 3405805686 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The number of edges in a regular graph of degree d and n vertices is

Options :

34058022741. ✗ Maximum of n, d

34058022742. ✗ n + d

34058022743. ✗ nd

34058022744. ✓ nd/2

Question Number : 47 Question Id : 3405805687 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which one the following in place sorting algorithms needs the minimum number of swaps

Options :

34058022745. ✗ Quick-sort

34058022746. ✗ Insertion sort

34058022747. ✗ Selection sort

34058022748. ✓ Heap sort

Question Number : 48 Question Id : 3405805688 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Dynamic programming strategy of algorithm design is used when

Options :

34058022749. ✗ We need an optimal solution

34058022750. ✓ The problem has overlapping subproblems

34058022751. ✗ The problem has non overlapping subproblems

34058022752. ✗ A solution faster than greedy method is required

Question Number : 49 Question Id : 3405805689 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If a and b are regular expressions, then $(a^* \cup b^*)^*$ is equivalent to

Options :

34058022753. ✓ $(a \cup b)^*$

34058022754. ✗ $(b^* \cup a^*)^*$

34058022755. ✗ $(b \cup a)^*$

34058022756. ✗ $(a \cup b)$

Question Number : 50 Question Id : 3405805690 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following statement is true

Options :

34058022757. ✗ If a language is context free it can be always be accepted by a deterministic push-down automaton.

34058022758. ✓ The union of two context free language is context free

34058022759. ✗ The intersection of two context free language is context free

34058022760. ✗ The complement of a context free language is context free

Question Number : 51 Question Id : 3405805691 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The language $\{a^m b^{m+n} \mid m,n \leq 1\}$ is

Options :

34058022761. ✗ Regular

34058022762. ✓ Context-free but not regular

34058022763. ✗ Context sensitive but not context free

34058022764. ✗ Type-0 but not context sensitive

Question Number : 52 Question Id : 3405805692 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Context free languages are not closed under

Options :

34058022765. ✗ Union

34058022766. ✗ Concatenation

34058022767. ✓ Complementation

34058022768. ✗ Kleene closure

Question Number : 53 Question Id : 3405805693 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following is in Greibach normal form

Options :

34058022769. ✗ $X \rightarrow YZ$

34058022770. ✓ $X \rightarrow x$

34058022771. ✗ $X \rightarrow Yx$

34058022772. ✗ $X \rightarrow xxY$

Question Number : 54 Question Id : 3405805694 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following CFG is ambiguous

Options :

34058022773. ✓ $S \rightarrow 0S|S0|0$

34058022774. ✗ $S \rightarrow 0S0|1S1|0|1|\varepsilon$

34058022775. ✗ $S \rightarrow 0S1|01$

34058022776. ✗ $S \rightarrow S0S0S|1$

Question Number : 55 Question Id : 3405805695 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following regular expression over {0,1} denotes the set of all strings not containing 100 as a substring

Options :

34058022777. ✖ $0^*(1+0)^*$

34058022778. ✖ 0^*1010^*

34058022779. ✖ 0^*10^*1

34058022780. ✔ $0(10+1)^*$

Question Number : 56 Question Id : 3405805696 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Consider the following languages :

$L1 = \{ww \mid w \in \{a,b\}^*\}$

$L2 = \{ww^R \mid w \in \{a,b\}^* w^R$ is the reverse of w$\}$)

$L3 = \{0^{2i} \mid i$ is an integer$\}$

$L4 = \{ \mid i$ is an integer$\}$

Which of the languages are regular

Options :

34058022781. ✖ Only $L1$ and $L2$

34058022782. ✖ Only $L2$, $L3$ and $L4$

34058022783. ✓ Only $L3$ and $L4$

34058022784. ✗ Only $L3$

Question Number : 57 Question Id : 3405805697 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The proof of pumping lemma for regular languages is based on

Options :

34058022785. ✓ Pigeon hole principle

34058022786. ✗ Iteration

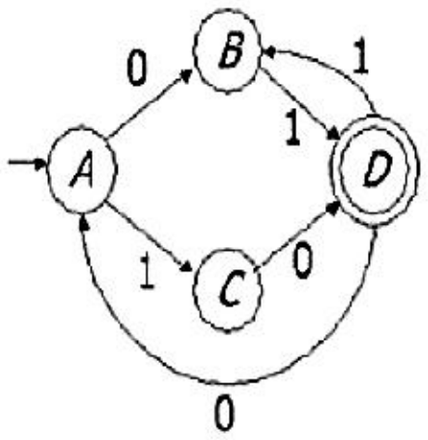
34058022787. ✗ Recursion

34058022788. ✗ Probabillity

Question Number : 58 Question Id : 3405805698 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Examine the following DFA



If the input is 011100101, which edge of the automaton is NOT traversed

Options :

34058022789. ✖ A

34058022790. ✖ B

34058022791. ✔ C

34058022792. ✖ D

Question Number : 59 Question Id : 3405805699 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A pattern associated with a token can be easily specified using

Options :

34058022793. ✔ Regular expression

34058022794. ✖ Finite-state automaton

34058022795. ✖ Push-down automaton

34058022796. ✗ Turing machine

Question Number : 60 Question Id : 3405805700 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A token can be easily recognized using a

Options :

34058022797. ✗ Regular expression

34058022798. ✓ Finite-state automaton

34058022799. ✗ Push-down automaton

34058022800. ✗ Turing machine

Question Number : 61 Question Id : 3405805701 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A table constructed by LALR parser is called _____

Options :

34058022801. ✗ Predictive parsing table

34058022802. ✗ Non-predictive parsing table

34058022803. ✓ LALR(1) parsing table

34058022804. ✖ Parsing table

Question Number : 62 Question Id : 3405805702 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following is a top-down parser

Options :

34058022805. ✔ Recursive descent parser

34058022806. ✖ Operator precedence parser

34058022807. ✖ An LR(k) parser

34058022808. ✖ An LALR(k) parser

Question Number : 63 Question Id : 3405805703 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

What is First (S) for the following grammar

$S \rightarrow ABc$

$A \rightarrow a|\varepsilon$

$B \rightarrow b|\varepsilon$

Options :

34058022809. ✖

{a, ε}

34058022810. ✖ {b, ε}

34058022811. ✖ {c, ε}

34058022812. ✔ {a, b, c}

Question Number : 64 Question Id : 3405805704 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

What is Follow (A) for the following grammar

$S \rightarrow ABc$

$A \rightarrow a|\varepsilon$

$B \rightarrow b|\varepsilon$

Options :

34058022813. ✖ {a}

34058022814. ✖ {b}

34058022815. ✖ {c}

34058022816. ✔ {b,c}

Question Number : 65 Question Id : 3405805705 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If the value of a variable gets increased or decreased by a fixed amount on every iteration of a loop, then the variable is called

Options :

34058022817. ✗ Invariant variable

34058022818. ✓ Induction variable

34058022819. ✗ Static variable

34058022820. ✗ Incremental variable

Question Number : 66 Question Id : 3405805706 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Peephole optimization is a form of

Options :

34058022821. ✗ Loop optimization

34058022822. ✓ Local optimization

34058022823. ✗ Constant folding

34058022824. ✗ Data flow analysis

Question Number : 67 Question Id : 3405805707 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

In an expression, if an exponent operator is replaced by multiplication operators, the optimization is a form of

Options :

34058022825. ✗ Constant folding

34058022826. ✓ Strength reduction

34058022827. ✗ Copy propagation

34058022828. ✗ Elimination of dead variables

Question Number : 68 Question Id : 3405805708 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

An LALR(1) parser for a grammar G can have shift-reduce (S-R) conflicts if and only if

Options :

34058022829. ✗ The SLR(1) parser for G has S-R conflicts

34058022830. ✓ The LR(1) parser for G has S-R conflicts

34058022831. ✗ The LR(0) parser for G has S-R conflicts

34058022832. ✗ The LALR(1) parser for G has reduce-reduce conflicts

Question Number : 69 Question Id : 3405805709 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The grammar A →AA |(A)|ε is not suitable for predictive-parsing because the grammar is

Options :

34058022833. ✓ Ambiguous

34058022834. ✗ Left-recursive

34058022835. ✗ Right-recurisve

34058022836. ✗ An operator-grammar

Question Number : 70 Question Id : 3405805710 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following statement is true

Options :

34058022837. ✓ The value of the counting semaphore variable is the number of processes or threads that are to be allowed inside the critical section.

34058022838. ✖ One example of a hardware solution to the critical section problem is a monitor.

34058022839. ✖ Reliability is one of a CPU scheduling criteria

34058022840. ✖ If a user-level thread blocks for I/O, all the other user-level threads belonging to the same process have to block.

Question Number : 71 Question Id : 3405805711 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The removal of a process from active contention of CPU and reintroducing them into memory later is known as

Options :

34058022841. ✖ Interrupt

34058022842. ✔ Swapping

34058022843. ✖ Signal

34058022844. ✖ Multiprogramming

Question Number : 72 Question Id : 3405805712 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The producer-consumer problem refers to

Options :

34058022845. ✗ P operation (wait), but no corresponding V operation (signal)

34058022846. ✗ Multiple clients and servers accomplishing a computation

34058022847. ✓ The need for synchronization in systems where many processes share a resource

34058022848. ✗ Computation speedup

Question Number : 73 Question Id : 3405805713 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

With the FIFO page replacement policy, and enough space for storing 3 page frames, the memory page reference string 'ABCABDDCABCD' would produce

Options :

34058022849. ✗ 5 page faults

34058022850. ✗ 6 page faults

34058022851. ✗ 7 page faults

34058022852. ✓ 8 page faults

Question Number : 74 Question Id : 3405805714 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Consider the following set of processes

Process	Arrival Time	Burst Time
F	0	6
G	2	3
H	3	2
I	7	5

the waiting time for shortest job first is

Options :

34058022853. ✗ 2.5

34058022854. ✓ 4

34058022855. ✗ 1.75

34058022856. ✗ 3.25

Question Number : 75 Question Id : 3405805715 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A typical way to overcome starvation of lower-priority processes in a priority-based scheduling system is to

Options :

34058022857. ✓ Change a process priority with its age

34058022858. ✗ Strictly follow the given process priority

34058022859. ✖ Reverse the priority order

34058022860. ✖ Ignore priority of a process

Question Number : 76 Question Id : 3405805716 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Any solution to the critical section problem must satisfy the following three criteria

Options :

34058022861. ✖ Disabling interrupts, Test And Set instruction, and Semaphores.

34058022862. ✖ Request, Use And Release.

34058022863. ✖ Mutual exclusion, No preemption, and Circular-wait.

34058022864. ✔ Mutual exclusion, Progress, and Bounded waiting.

Question Number : 77 Question Id : 3405805717 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

To provide a solution to dining philosopher's problem with n philosophers dining, how many semaphores are required

Options :

34058022865. ✖ n

34058022866. ✗ n-1

34058022867. ✓ 2

34058022868. ✗ 3

Question Number : 78 Question Id : 3405805718 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A situation where several processes access and manipulate the same data concurrently and the outcome of the execution depends on the particular order in which access takes place is called

Options :

34058022869. ✗ Data consistency

34058022870. ✗ Starvation

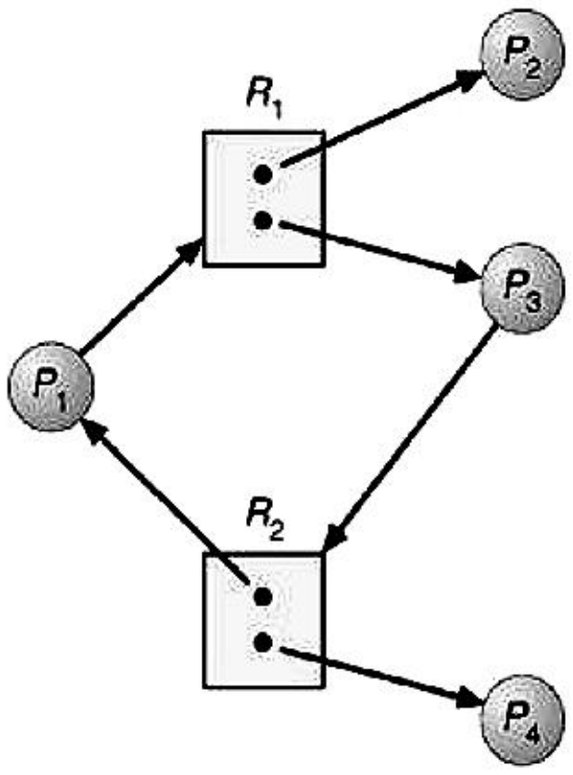
34058022871. ✗ Aging

34058022872. ✓ Race condition

Question Number : 79 Question Id : 3405805719 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The resource allocation graph below _____



Options :

34058022873. ✔ Contains a cycle, but it is not deadlocked

34058022874. ✘ Contains a cycle and it is deadlocked

34058022875. ✘ Contains no cycles and is not deadlocked

34058022876. ✘ Contains no cycles and is deadlocked

Question Number : 80 Question Id : 3405805720 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Three file descriptors associated with every Linux process are

Options :

34058022877. ✘ Standard input, Standard output, and Standard pipe

34058022878. ✓ Standard input, Standard output, and Standard error

34058022879. ✗ Standard input, Standard output, and Standard deviation

34058022880. ✗ Standard input, Standard output, and Standard terminal

Question Number : 81 Question Id : 3405805721 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following statement is true

Options :

34058022881. ✗ A column name in the entire relational database must be unique.

34058022882. ✗ In any relational database, an entity must be related to another entity.

34058022883. ✗ A relation (table) can have duplicate records.

34058022884. ✓ In a relational database, every relationship must be supported by a foreign key.

Question Number : 82 Question Id : 3405805722 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

E-R model uses which symbol to represent a weak entity set

Options :

34058022885. ✗ Dotted rectangle

34058022886. ✖ Diamond

34058022887. ✔ Doubly outlined rectangle

34058022888. ✖ Dotted Diamond

Question Number : 83 Question Id : 3405805723 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If X->YZ, then X->Y and X->Z are true; this rule is called

Options :

34058022889. ✖ Reflexive rule

34058022890. ✖ Augmentation rule

34058022891. ✔ Decomposition rule

34058022892. ✖ Transitive rule

Question Number : 84 Question Id : 3405805724 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Suppose relation R(A,B,C,D,E) has the following functional dependencies

$A \rightarrow B$
$B \rightarrow C$
$BC \rightarrow A$
$A \rightarrow D$
$E \rightarrow A$
$D \rightarrow E$

Which of the following is not a key

Options :

34058022893. ✗ A

34058022894. ✗ E

34058022895. ✓ B,C

34058022896. ✗ E

Question Number : 85 Question Id : 3405805725 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

One of the following four expressions of relational algebra is not equivalent to the other three. They are all based on the relations R(A,B) and S(B,C). Indicate which is not equivalent to the others

Options :

34058022897. ✗ $\pi_{AB}(R \bowtie S)$

34058022898. ✗ $R \bowtie \pi_{\mathrm{B}}(S)$

34058022899. ✗ $R \cap (\pi_A(R) \times \pi_B(S))$

34058022900. ✓ $\pi_{A,R.B}(R \times S)$

Question Number : 86 Question Id : 3405805726 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Suppose relation R(A,B) currently has tuples {(1,2), (1,3), (3,4)} and relation S(B,C) currently has {(2,5), (4,6), (7,8)}. Then the number of tuples in the result of the SQL query:

Select *

From R Natural Outer Join S;

is

Options :

34058022901. ✗ 2

34058022902. ✓ 4

34058022903. ✗ 5

34058022904. ✗ 6

Question Number : 87 Question Id : 3405805727 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following statements are TRUE about an SQL query

P: An SQL query can contain a HAVING clause even if it does not a GROUP BY clause

Q: An SQL query can contain a HAVING clause only if it has a GROUP BY clause

R: All attributes used in the GROUP BY clause must appear in the SELECT clause

S: Not all attributes used in the GROUP BY clause need to appear in the SELECT clause

Options :

34058022905. ✗ P and R

34058022906. ✓ P and S

34058022907. ✗ Q and R

34058022908. ✗ Q and S

Question Number : 88 Question Id : 3405805728 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The changes made by one transaction are not visible to other transactions till the commit point. This property is called

Options :

34058022909. ✓ Isolation

34058022910. ✖ Durability

34058022911. ✖ Atomicity

34058022912. ✖ Consistency

Question Number : 89 Question Id : 3405805729 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following is ensured by a two-phase commit protocol

Options :

34058022913. ✖ The "growing" phase of a transaction t completely precedes the "shrinking" phase of the transaction t

34058022914. ✖ Deadlock do not occur.

34058022915. ✔ Transactions in a distributed database provide all-or-nothing atomicity, just like transactions in a single-site database.

34058022916. ✖ All sites in a distributed database commit at exactly the same instant.

Question Number : 90 Question Id : 3405805730 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Consider the following actions

Transaction 1

Transaction 2

Transaction 3

Commit;

Rollback;

What does Rollback do

Options :

34058022917. ✔ No action.

34058022918. ✖ Clears all transactions.

34058022919. ✖ Redoes the transactions before commit.

34058022920. ✖ Undoes the transactions before commit.

Question Number : 91 Question Id : 3405805731 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Consider a B+ tree in which the maximum number of keys in a node is 5. What is the minimum number of keys in any non-root node

Options :

34058022921. ✖ 1

34058022922. ✔ 2

34058022923. ✗ 3

34058022924. ✗ 4

Question Number : 92 Question Id : 3405805732 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following routing protocol uses Dijkstra's algorithm

Options :

34058022925. ✓ OSPF

34058022926. ✗ RIP

34058022927. ✗ BGP

34058022928. ✗ IS-IS

Question Number : 93 Question Id : 3405805733 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

In CRC, if the size of divisor is 10bits, then what is the degree of the generator polynomial

Options :

34058022929. ✓ 9

34058022930. ✗ 10

34058022931. ✖ 11

34058022932. ✖ 12

Question Number : 94 Question Id : 3405805734 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following is not a valid IP address

Options :

34058022933. ✖ 192.168.50.10

34058022934. ✖ 172.16.8.4

34058022935. ✖ 10.25.45.16

34058022936. ✔ 192.168.50.08

Question Number : 95 Question Id : 3405805735 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The size of address in IPv6 is

Options :

34058022937. ✖ 2^{16}

34058022938. ✖ 2^{32}

34058022939. ✖ 2^{64}

34058022940. ✔ 2^{128}

Question Number : 96 Question Id : 3405805736 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

In TCP

Options :

34058022941. ✔ Server starts the connection by opening a connection in listen and accept mode

34058022942. ✖ Client starts a connection in request mode

34058022943. ✖ Server sends the message to client to open a connection

34058022944. ✖ Client requests the server to open a message

Question Number : 97 Question Id : 3405805737 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Routers and switches are different because

Options :

34058022945. ✔ Routers operate at the Network Layer, while switches operate at the Datalink Layer

34058022946. ✖ Switches operate at the Network Layer, while routers operate at the Datalink Layer

34058022947. ✖ Routers are for wired networks, while switches are for wireless networks

34058022948. ✖ Switches are for wired networks, while routers are for wireless networks

Question Number : 98 Question Id : 3405805738 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Simple mail transfer protocol (SMTP) utilizes ____ as the transport layer protocol for electronic mail transfer

Options :

34058022949. ✖ DCCP

34058022950. ✖ UDP

34058022951. ✔ TCP

34058022952. ✖ SCTP

Question Number : 99 Question Id : 3405805739 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A technique referred to as a _____ is a mapping achieved by performing some sort of permutation on the plaintext letters

Options :

34058022953. ✔ Transposition cipher

34058022954. ✘ Polyalphabetic cipher

34058022955. ✘ Caesar cipher

34058022956. ✘ Monoalphabetic cipher

Question Number : 100 Question Id : 3405805740 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

_____ is the protection of transmitted data from passive attacks

Options :

34058022957. ✘ Access control

34058022958. ✘ Data control

34058022959. ✘ Nonrepudiation

34058022960. ✔ Confidentiality

Question Number : 101 Question Id : 3405805741 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Digital Signature is

Options :

34058022961. ✗ Scanned signature on computer

34058022962. ✗ Code number of the sender

34058022963. ✗ Public key encryption.

34058022964. ✓ Software to recognize signature

Question Number : 102 Question Id : 3405805742 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

What is the type of coupling when one module interacts with another by passing it's local data values to another as parameters

Options :

34058022965. ✓ Data

34058022966. ✗ Common

34058022967. ✗ Stamp

34058022968. ✗ Content

Question Number : 103 Question Id : 3405805743 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which model should be preferred if delivery time is less

Options :

34058022969. ✗ Prototype Model

34058022970. ✗ Classical Waterfall Model

34058022971. ✓ RAD Model

34058022972. ✗ RUP Model

Question Number : 104 Question Id : 3405805744 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

What is the shape used to represent function or process in DFD

Options :

34058022973. ✓ Ellipse

34058022974. ✗ Square

34058022975. ✗ Open Rectangle

34058022976. ✗ Polygon

Question Number : 105 Question Id : 3405805745 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Class and Object Diagrams are defined in which of the perspectives

Options :

34058022977. ✓ Structural

34058022978. ✗ Implementation

34058022979. ✗ Behavioral

34058022980. ✗ Environmental

Question Number : 106 Question Id : 3405805746 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

SRS is also known as specification of

Options :

34058022981. ✗ White box testing

34058022982. ✗ Stress testing

34058022983. ✗ Integrated testing

34058022984. ✓ Black box testing

Question Number : 107 Question Id : 3405805747 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The feature of the object oriented paradigm which helps code reuse is

Options :

34058022985. ✗ Object

34058022986. ✗ Class

34058022987. ✓ Inheritance

34058022988. ✗ Aggregation

Question Number : 108 Question Id : 3405805748 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Consider an online shop for books. Which of the following is not a functional requirement

Options :

34058022989. ✗ The system shall allow the user to search for books by author and title

34058022990. ✗ The system shall provide a list of all previously ordered books to the user

34058022991. ✓ The system shall support minimum 1000 transactions per hour

34058022992. ✗ The system shall allow the user to remove books from the shopping cart at any moment

Question Number : 109 Question Id : 3405805749 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The tests that run during the project development or before a programmer checks in any changes to the global repository are normally characterized as

Options :

34058022993. ✔ Regression tests

34058022994. ✘ Integration tests

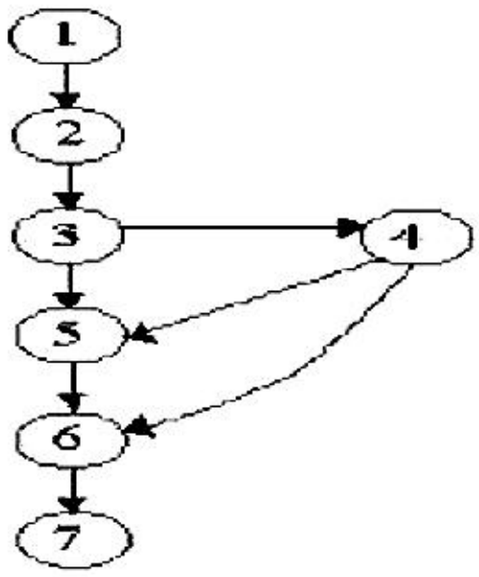
34058022995. ✘ Validation tests

34058022996. ✘ System tests

Question Number : 110 Question Id : 3405805750 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

For the flow graph shown below the cyclomatic complexity is



Options :

34058022997. ✔ 3

34058022998. ✖ 4

34058022999. ✖ 5

34058023000. ✖ 6

Question Number : 111 Question Id : 3405805751 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The main purpose of integration testing is to find

Options :

34058023001. ✖ Design errors

34058023002. ✖ Analysis errors

34058023003. ✖ Procedure errors

34058023004. ✔ Interface errors

Question Number : 112 Question Id : 3405805752 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

What is the correct HTML formulation for creating a hyperlink

Options :

34058023005. ✖ Qualitypoint Technologies

34058023006. ✓ Qualitypoint Technologies

34058023007. ✗ <a> Error! Hyperlink reference not valid.>

34058023008. ✗ Qualitypoint Technologies

Question Number : 113 Question Id : 3405805753 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

What does the following subpattern in XML schema mean

<xs:pattern value="[A-Z]{4}]"/>

Options :

34058023009. ✗ 4 or more upper case characters

34058023010. ✗ 4 or less upper case characters

34058023011. ✓ Exactly 4 upper case characters

34058023012. ✗ 4 or more lower case characters

Question Number : 114 Question Id : 3405805754 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following sentence is not true about JSP

Options :

34058023013. ✗ JSP only accepts HTTP requests.

34058023014. ✓ In JSP, we can override the service() method.

34058023015. ✗ In JSP, we cannot override its service() method.

34058023016. ✗ In JSP session management is automatically enabled

Question Number : 115 Question Id : 3405805755 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

What is the Transport method in SOAP

Options :

34058023017. ✓ HTTP

34058023018. ✗ FTP

34058023019. ✗ POST

34058023020. ✗ RMI

Question Number : 116 Question Id : 3405805756 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

WSDL document does not use the following element in the definition of network services

Options :

34058023021. ✗ Port Type

34058023022. ✓ Messenger

34058023023. ✗ Port

34058023024. ✗ Operation

Question Number : 117 Question Id : 3405805757 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which one of these is not the rule in XML

Options :

34058023025. ✗ All attributes of an element must be enclosed within quotes

34058023026. ✗ Tags should not overlap

34058023027. ✓ Tags are not case-sensitive

34058023028. ✗ Tags must be closed

Question Number : 118 Question Id : 3405805758 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time

: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following is not one of the three types of nodes in the DOM's node tree

Options :

34058023029. ✓ Reference

34058023030. ✗ Element

34058023031. ✗ Text

34058023032. ✗ Attribute

Question Number : 119 Question Id : 3405805759 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following statements define a JavaScript array

Options :

34058023033. ✗ var txt = new Array="tim","kim","jim"

34058023034. ✗ var txt = new Array:1=("tim")2=("kim")3=("jim")

34058023035. ✓ var txt = new Array("tim","kim","jim")

34058023036. ✗ var txt = new Array(1:"tim",2:"kim",3:"jim")

Question Number : 120 Question Id : 3405805760 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following is not a method in the Servlet interface

Options :

34058023037. ✖ destroy()

34058023038. ✔ create()

34058023039. ✖ getServletConfig()

34058023040. ✖ init(ServletConfig)u