Summary in Graph

Exam Summary (GO Classes CS Test Series 2025 | Mock GATE | Test 3)

Qs. Attempted:	**1** 0 + 1	**Correct Marks:**	**2** 0 + 2
Correct Attempts:	**1** 0 + 1	**Penalty Marks:**	**0** 0 + 0
Incorrect Attempts:	**0** 0 + 0	**Resultant Marks:**	**2** 0 + 2

Total Questions:	**65** 30 + 35
Total Marks:	**100** 30 + 70
Exam Duration:	**180 Minutes**
Time Taken:	**0 Minutes**

EXAM RESPONSE   EXAM STATS   FEEDBACK

- -

Aptitude

Q #1 Multiple Choice Type   Award: 1   Penalty: 0.33   Quantitative Aptitude

On segment WZ above, if $WY = 21, XZ = 26$, and YZ is twice WX, what is the value of XY?

A. 5
B. 10
C. 16
D. It cannot be determined from the information given.

Your Answer: **Correct Answer: C**   Not Attempted   Time taken: 00min 00sec   Discuss

Q #2 Multiple Choice Type   Award: 1   Penalty: 0.33   Verbal Aptitude

Poe's _____ reviews of contemporary fiction, which often find great merit in otherwise _____ literary gems, must make us respect his critical judgment in addition to his well-known literary talent.

A. thorough, completed
B. petulant, unpopular

C. insightful, unappreciated

D. enthusiastic, acclaimed

Your Answer: | **Correct Answer: C** | Not Attempted | Time taken: 00min 00sec | Discuss

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Q #3 Multiple Choice Type   Award: 1   Penalty: 0.33   Quantitative Aptitude

Which of the following statements about positive integers is NOT true?

A. If x is a composite integer, then x has a prime divisor less than or equal to the square root of x.

B. There are infinitely many prime integers.

C. If a divides bc, then either a divides b or a divides c.

D. If a divides b and b divides c, then a divides c.

Your Answer: | **Correct Answer: C** | Not Attempted | Time taken: 00min 00sec | Discuss
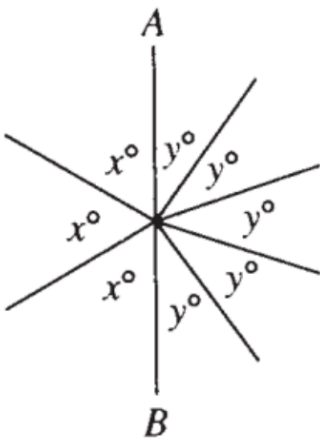

Q #4 Multiple Choice Type   Award: 1   Penalty: 0.33   Quantitative Aptitude

In the figure above, AB is a line segment. What is the value of $\dfrac{x-y}{x+y}$?

A. $\frac{5}{24}$

B. $\frac{1}{4}$

C. $\frac{7}{16}$

D. $\frac{11}{24}$

Your Answer: | **Correct Answer: B** | Not Attempted | Time taken: 00min 00sec | Discuss

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Q #5 Multiple Choice Type   Award: 1   Penalty: 0.33   Analytical Aptitude

Suppose A, B, and C are statements such that C is true if exactly one of A and B is true. If C is false, which of the following statements must be true?

A. If A is true, then B is false.

B. If A is false, then B is false.

C. If A is false, then B is true.

D. Both A and B are true.

Your Answer: | **Correct Answer: B** | Not Attempted | Time taken: 00min 02sec | Discuss

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Q #6 Multiple Choice Type   Award: 2   Penalty: 0.67   Quantitative Aptitude

Consider a binary number with m digits, where m is an even number. This binary number has alternating 1's and 0's, with digit 1 in the highest place value. The decimal equivalent of this binary number is

A. $2^m - 1$

B. $\dfrac{(2^m - 1)}{3}$

C. $\dfrac{(2^{m+1} - 1)}{3}$

D. $\dfrac{2}{3}(2^m - 1)$

Your Answer: Correct Answer: D   Not Attempted   Time taken: 00min 00sec   Discuss

Q #7 Multiple Choice Type   Award: 2   Penalty: 0.67   Spatial Aptitude

In the options figure below, pick the TWO choices that will come together to make the question figure shown. Pieces may be reflected and/or rotated.

A. $b + c$

B. $a + c$

C. $d + e$

D. $b + d$

Your Answer: Correct Answer: D   Not Attempted   Time taken: 00min 00sec   Discuss

Q #8 Multiple Choice Type   Award: 2   Penalty: 0.67   Analytical Aptitude

A, B, C, D, E, F, G and H are seated around a circular table. B's neighbors are G and D. H is seated third to the left of B and second to the right of A. C's neighbors are A and G; and B and E are not seated opposite each other. Who is fourth to the right of C, and third to the left of B?

A. E, E

B. D, H

C. H, C

D. E, H

Your Answer: Correct Answer: D   Not Attempted   Time taken: 00min 00sec   Discuss
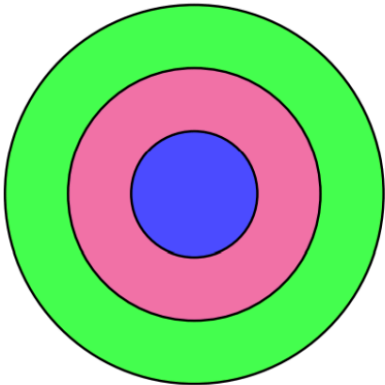
Q #9 Multiple Choice Type   Award: 2   Penalty: 0.67   Quantitative Aptitude

The dartboard below is made up of three concentric circles with radii $2, 5,$ and 7. Assuming that a dart thrown will land randomly on the dartboard, what is the probability that it lands in the magenta region? (The colors of regions on the dartboard are green, magenta, blue)

A. 40.857%
B. 41.857%
C. 42.857%
D. 43.857%

| Your Answer: | Correct Answer: C | Not Attempted | Time taken: 00min 00sec | Discuss |

Q #10 Multiple Choice Type   Award: 2   Penalty: 0.67   Quantitative Aptitude

An integer c is a common divisor of two integers x and y if and only if c is a divisor of x and c is a divisor of y. Which of the following sets of integers could possibly be the set of all common divisors of two integers?

A. $\{-6, -2, -1, 1, 2, 6\}$
B. $\{-6, -2, -1, 0, 1, 2, 6\}$
C. $\{-6, -3, -2, -1, 1, 2, 3, 6\}$
D. $\{-6, -4, -3, -2, -1, 1, 2, 3, 4, 6\}$

| Your Answer: | Correct Answer: C | Not Attempted | Time taken: 00min 00sec | Discuss |

Technical

Q #1 Multiple Choice Type   Award: 1   Penalty: 0.33   Programming in C

What is the output of the following code fragment?

```
    int n = 9;
    int *p;
    p = &n;
    n++;
5.  printf ("%d, %d", *p + 2, n);
```

A. $11, 9$
B. $9, 10$
C. $12, 10$
D. $11, 10$

| Your Answer: | Correct Answer: C | Not Attempted | Time taken: 00min 00sec | Discuss |

Q #2 Numerical Type   Award: 1   Penalty: 0   Programming in C

Consider the following declaration of variables pp and pt in C Program.

```
struct point { int x;
int y;
char *name;
} pt[] = {{200,40,"begin"},{300,100,"end"}}, *pp = pt;
```

How many of the following lines output the letter 'g'?

```
        1. printf("%c",  *((*pp).name+2) );

        2. printf("%c",  **pp.name+2 );

5.      3. printf("%c",  *(pp->name+2) );
```

Your Answer: | **Correct Answer: 2** | Not Attempted | Time taken: 00min 00sec | Discuss

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Q #3 | Multiple Select Type | Award: 1 | Penalty: 0 | Compiler Design

Consider the following $\mathrm{LR}(0)$ grammar.

$$\mathrm{S} \to a\mathrm{S} \mid b$$

Given below is the $\mathrm{LR}(0)$ state machine for this grammar.
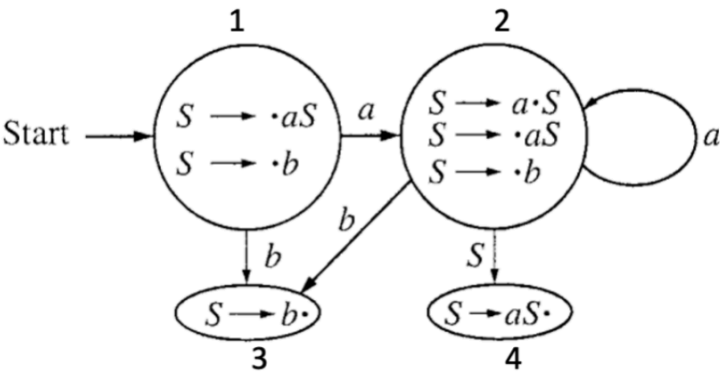
What could the contents of the stack have been if it is known that the parser is in state 3?

A. a
B. $a\mathrm{S}b$
C. ab
D. aab

Your Answer: | **Correct Answer: C;D** | Not Attempted | Time taken: 00min 00sec | Discuss

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Q #4 | Multiple Select Type | Award: 1 | Penalty: 0 | Compiler Design

Which of the following is/are TRUE regarding construction of $\mathrm{FIRST}(\mathrm{X})$ for a grammar symbol X?

A. If X is a terminal, then $\mathrm{FIRST}(\mathrm{X})$ is $\{\mathrm{X}\}$
B. If X is a non terminal and $\mathrm{X} \to \varepsilon$ is a production, then ε will be in $\mathrm{FIRST}(X)$
C. If X is a non-terminal and $\mathrm{X} \to \mathrm{Y}_1\mathrm{Y}_2$ is a production, then every symbol in $\mathrm{FIRST}(\mathrm{Y}_1)$ other than ε will be in $\mathrm{FIRST}(X)$
D. If X is a non-terminal and $\mathrm{X} \to \mathrm{Y}_1\mathrm{Y}_2$ is a production, then ε will be in $\mathrm{FIRST}(\mathrm{X})$ if ε is in $\mathrm{FIRST}(\mathrm{Y}_1)$and $\mathrm{FIRST}(\mathrm{Y}_2)$

| Your Answer: | Correct Answer: A;B;C;D | Not Attempted | Time taken: 00min 00sec | Discuss |

Q #5   Multiple Select Type   Award: 1   Penalty: 0   Compiler Design

A lexical analyzer uses the following rules to recognize tokens over the alphabet a, b, c.

$$
\begin{array}{lll}
\text{Rule 1} & aa^* & \{\text{return Token1;}\} \\
\text{Rule 2} & c(a \mid b)^* & \{\text{return Token2;}\} \\
\text{Rule 3} & ab^*c & \{\text{return Token3;}\} \\
\text{Rule 4} & caa^* & \{\text{return Token4;}\}
\end{array}
$$

When using regular expressions to scan an input, we resolve conflicts by taking the largest possible match at any point. If two longest matches are of same length then we give preference in the below order :
$\text{Rule 1} > \text{Rule 2} > \text{Rule 3} > \text{Rule 4}$

Which of the following Tokens can never be generated by the lexical analyzer for any possible input ?

A. Token 1
B. Token 2
C. Token 3
D. Token 4

| Your Answer: | Correct Answer: D | Not Attempted | Time taken: 00min 00sec | Discuss |

Q #6   Multiple Choice Type   Award: 1   Penalty: 0.33   Operating System

Consider the following code fragment:

```
     int global_v=0;
     int main( )
     {
         int child;
  5.     int local_v = 0;
         child = fork();
         if(child == 0)
             printf("%d %d", global_v, local_v);
         else {
 10.             global_v = 1;
                 local_v = 1;
         }
         return 0;
     }
```

What numbers will be printed upon execution of the above code?

A. 0 0

B. 0 1

C. 1 1

D. Depend on the scheduling i.e. parent gets schedule first to completion or child gets schedule first.

| Your Answer: | Correct Answer: A | Not Attempted | Time taken: 00min 00sec | Discuss |

Q #7   Multiple Select Type   Award: 1   Penalty: 0   Operating System

Assume the following linked list insertion code, which inserts into a linked list of Node objects pointed to by shared global variable head.

```
    int Insert(int key) {
        Node *n = malloc(sizeof(Node));
        n → key = key;
        n → next = head;
5.      head = n;
        return 0;
    }
```

This code is executed by each of three threads exactly once, without adding any synchronization primitives (such as semaphore locks).
Assuming malloc() is thread-safe (i.e., can be called without worries of data races) and that malloc() returns successfully.
What are the possible sizes of linked list when these three threads are finished executing?
Assumes list is empty at beginning.

A. 0
B. 1
C. 2
D. 3

Your Answer: | **Correct Answer: B;C;D** | Not Attempted | Time taken: 00min 00sec | Discuss
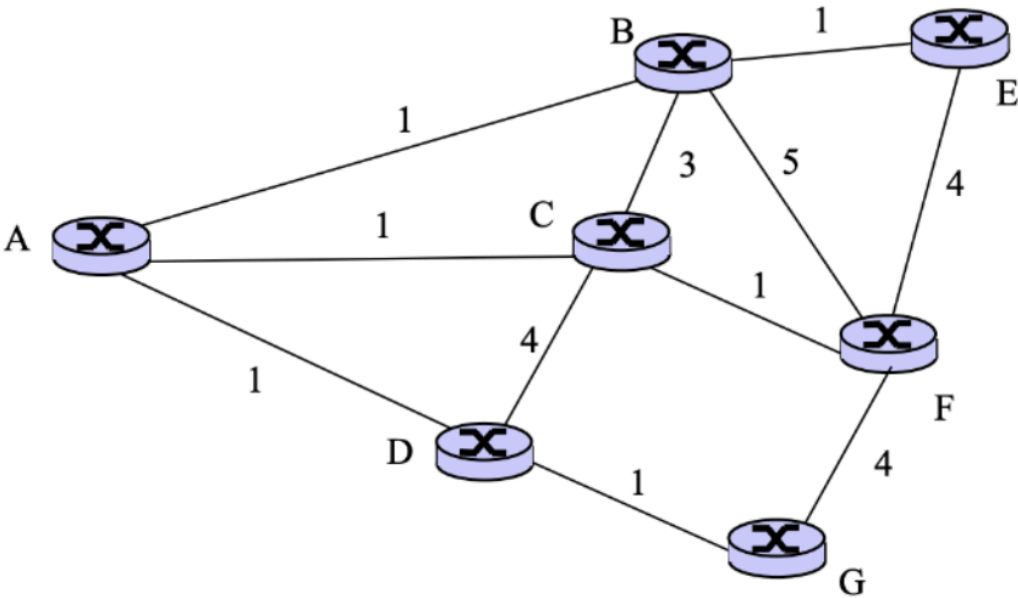

Q #8 | Numerical Type | Award: 1 | Penalty: 0 | Computer Networks

In the graph below, use the Distance Vector routing to find the minimum distance from each node to node A. Assume that exchanges of routing information and routing table updates are synchronous (i.e., they happen at the same time at all nodes).

Also, all links are symmetric and the cost is identical in both directions. In each round, all nodes exchange their distance vectors with their respective neighbors. Then all nodes update their distance vectors. Initially, all the nodes have direct cost paths for neighbors in their distance vector and all other costs are infinity.

How many rounds will it take for the costs of reaching node A to become stable among all routers?

Your Answer: | **Correct Answer: 1** | Not Attempted | Time taken: 00min 00sec | Discuss

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Q #9 | Numerical Type | Award: 1 | Penalty: 0 | Computer Networks

Consider the effect of using slow start on a line with a 10-msec round-trip time and no congestion. The receive window (rwnd)is 24 KB and the maximum segment size is 2 KB. How long (in msec) does it take before the first full window can be sent?

Your Answer: | Correct Answer: 40 | Not Attempted | Time taken: 00min 00sec | Discuss

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Q #10 | Multiple Select Type | Award: 1 | Penalty: 0 | Computer Networks

Which of the following options is/are correct regarding the TCP protocol at the transport layer?

    A. Suppose host A is sending a large file to host B over a TCP connection. The number of unacknowledged bytes that A sends cannot exceed the size of the advertised receiver buffer.

    B. The size of the TCP rwnd (window advertises by receiver) never changes throughout the duration of the connection.

    C. Suppose host A is sending host B a large file over a TCP connection. If the sequence number for a segment of this connection is m, then the sequence number for the subsequent segment will necessarily be $m + 1$.

    D. Suppose host A sends host B one segment with sequence number 38 and 4 bytes of data. Then in the same segment the acknowledgement number is necessarily 42.

Your Answer: | Correct Answer: A | Not Attempted | Time taken: 00min 00sec | Discuss
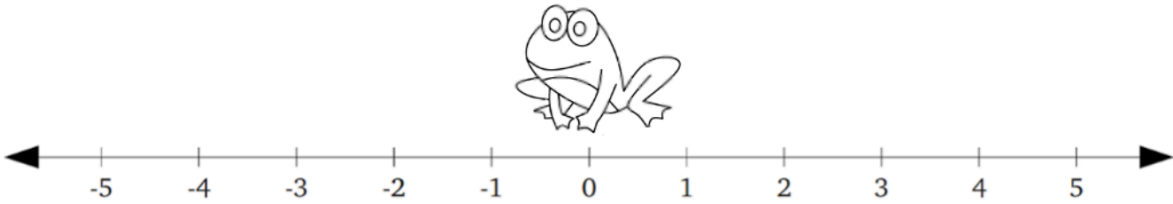

Q #11 | Multiple Choice Type | Award: 1 | Penalty: 0.33 | Probability

A frog starts on a 1-dimensional number line at 0. At each second, independently, the frog takes a unit step right with probability p_1, to the left with probability p_2, and doesn't move with probability p_3, where $p_1 + p_2 + p_3 = 1$. After 2 seconds, let X be the location of the frog.

What is the probability that the frog is at position 0 after 2 seconds i.e. value of $P(X = 0)$?

    A. $p_3^2 + 2p_1p_2$
    B. $p_3^2 + p_1p_2$
    C. p_3^2
    D. $2p_1p_2$

Your Answer: | Correct Answer: A | Not Attempted | Time taken: 00min 00sec | Discuss

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Q #12 | Multiple Select Type | Award: 1 | Penalty: 0 | Linear Algebra

Consider a matrix A of $m \times n$ size. x and b are vectors in R^n. Let $\mathrm{rank}(\mathrm{A}) = n$.

Which of the following is possible about solutions of $Ax = b$?

    A. There are infinity solutions
    B. There is unique solution
    C. There is no solution
    D. There are exactly 2 solutions

| Your Answer: | Correct Answer: B | Not Attempted | Time taken: 00min 00sec | Discuss |

Q #13 Multiple Select Type   Award: 1   Penalty: 0   Calculus

Consider the derivative of a function $f(x)$ is given to us as follows -

$$f'(x) = \frac{1-x}{(1+x)^3}$$

Which of the following is/are true about the function $f(x)$?

  A. $f(x)$ is decreasing if $x < -1$
  B. $f(x)$ is decreasing if $x > 1$
  C. $f(x)$ is increasing if $-1 < x < 1$
  D. $f(x)$ is increasing if $x < 0$

| Your Answer: | Correct Answer: A;B;C | Not Attempted | Time taken: 00min 00sec | Discuss |

Q #14 Multiple Select Type   Award: 1   Penalty: 0   Theory of Computation

Which of the following languages is/are Necessarily non-regular?

  A. $\{w \in \Sigma^* \mid w \notin L\}$, where L is some given regular language.
  B. $\{w \in \Sigma^* \mid w \notin \mathrm{L}\}$, where L is some given non-regular language.
  C. $\{ww \mid w \in \{0\}^*\}$
  D. $\{a^n w \mid n \geq 1; w \in \{a,b\}^*; w \text{ contains at least } n \text{ occurrences of 'a'}\}$

| Your Answer: | Correct Answer: B | Not Attempted | Time taken: 00min 00sec | Discuss |

Q #15 Multiple Choice Type   Award: 1   Penalty: 0.33   Theory of Computation

A class of languages is closed under subsets if whenever L is in the class and $\mathrm{M} \subseteq \mathrm{L}$, M is also in the class. Among the context-free, regular, and finite languages, the classes that are closed under subsets are:

  A. none of context-free, regular, or finite.
  B. all of context-free, regular, and finite.
  C. only context-free
  D. only finite.

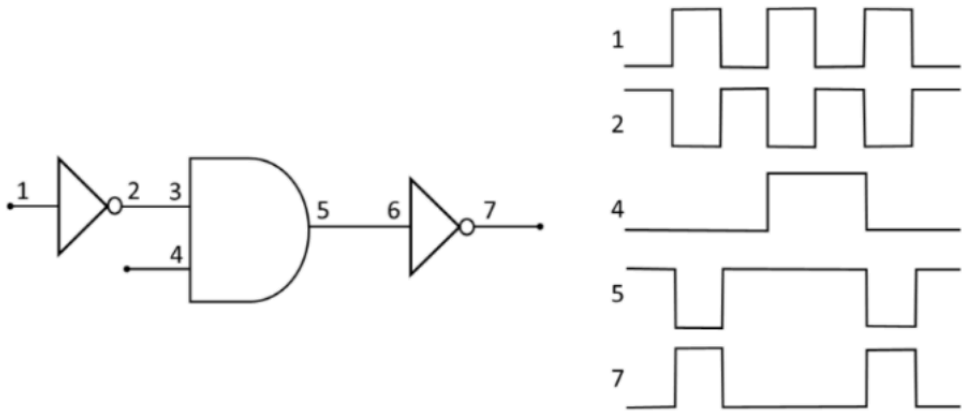| Your Answer: | Correct Answer: D | Not Attempted | Time taken: 00min 00sec | Discuss |

Q #16 Multiple Select Type   Award: 1   Penalty: 0   Digital Logic

Figure shows a circuit diagram comprising Boolean logic gates and the corresponding timing diagrams show the digital signals at various points in the circuit. Which of the following is/are true?

A. The NOT gate on the left is faulty.

B. The NOT gate on the right is faulty.

C. The AND gate is faulty and acts like a NOR gate.

D. The AND gate is faulty and acts like an OR gate.

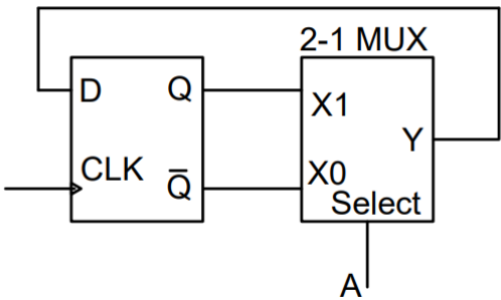| Your Answer: | Correct Answer: D | Not Attempted | Time taken: 00min 00sec | Discuss |

Q #17   Multiple Choice Type   Award: 1   Penalty: 0.33   Digital Logic

The state transition diagram for the logic circuit shown is

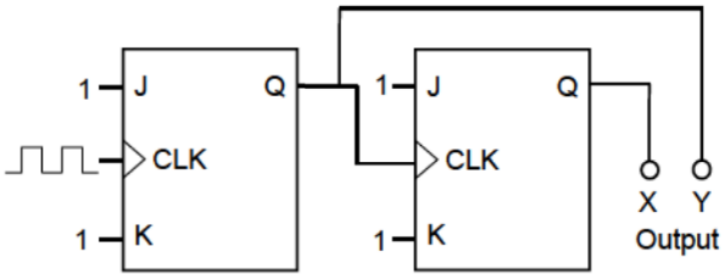| Your Answer: | Correct Answer: D | Not Attempted | Time taken: 00min 00sec | Discuss |

Q #18   Multiple Choice Type   Award: 1   Penalty: 0.33   Digital Logic

The circuit shown in the figure below uses ideal positive edge-triggered synchronous $J - K$ flip flops with outputs X and Y. If the initial state of the output is $X = 0$ and $Y = 0$ just before the arrival of the first clock pulse, the state of the output just before the arrival of the second clock pulse is

A. $X = 0, Y = 0$
B. $X = 0, Y = 1$
C. $X = 1, Y = 0$
D. $X = 1, Y = 1$

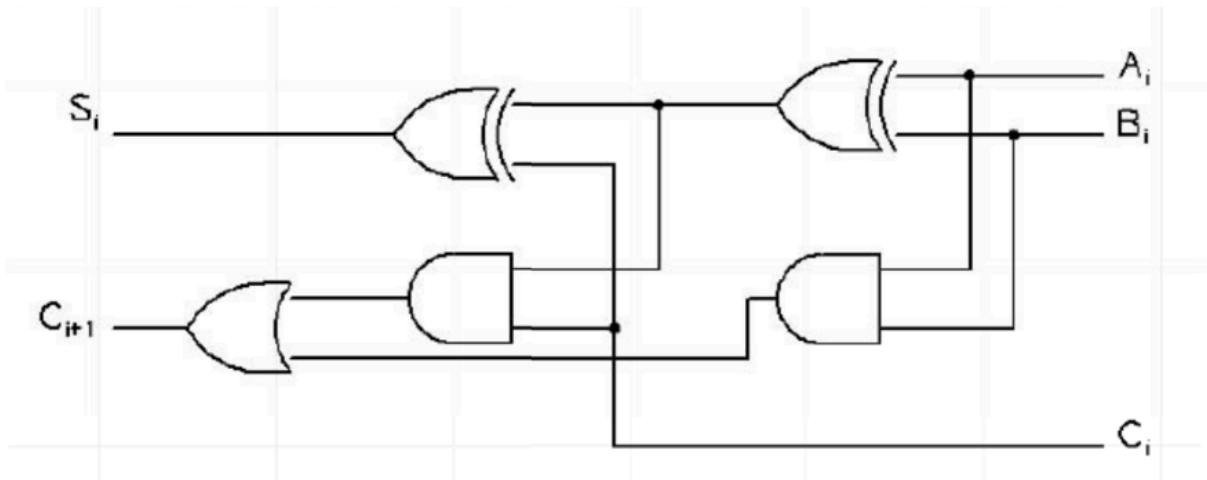Your Answer: Correct Answer: D   Not Attempted   Time taken: 00min 00sec   Discuss

Q #19   Numerical Type   Award: 1   Penalty: 0   Digital Logic

The figure below shows the ith full-adder block of a binary adder circuit($i \geq 2$). C_i is the input carry and C_{i+1} is the output carry of the circuit. Assume that each logic gate has a delay of 2 nanosecond, with no additional time delay due to the interconnecting wires. If the inputs A_i, B_i are available and stable throughout the carry propagation, the maximum time taken for an input C_i to produce a steady-state output C_{i+1} is _____ nanosecond.

Your Answer: Correct Answer: 4   Not Attempted   Time taken: 00min 00sec   Discuss

Q #20   Numerical Type   Award: 1   Penalty: 0   Databases

On a relational instance of a $RDBMS$ relation R, we define the following query :

$$\sigma_{<\text{selection condition} >}(R)$$

Assume that the respective instance of R has 10 tuples, then how many different results are possible for the given query?

Your Answer: Correct Answer: 1024   Not Attempted   Time taken: 00min 00sec   Discuss

Q #21 | Numerical Type | Award: 1 | Penalty: 0 | Databases |

Suppose we have a relation $R(A, B, C, D, E, F)$ with functional dependencies(FDs):

$$A \rightarrow B$$
$$BCD \rightarrow E$$
$$E \rightarrow F$$

Suppose there are at most 2 different values for each of attributes A, C, and D. What is the maximum number of different values for attribute F?

| Your Answer: | Correct Answer: 8 | Not Attempted | Time taken: 00min 00sec | Discuss |

Q #22 | Multiple Select Type | Award: 1 | Penalty: 0 | Set Theory & Algebra |

Let f be a function from a non-empty set X to a non-empty set Y.
Consider the properties of function $f : X \rightarrow Y$ expressed by each of the following propositions.

P. $\forall y \in Y \exists x \in X(f(x) = y)$
Q. $\forall y \in Y \exists! x \in X(f(x) = y)$
R. $\exists x \in X \exists z \in X(x \neq z \wedge f(x) = f(z))$

The symbol '$\exists$!' is used to represent the unique existential quantifier, meaning "there exists exactly one".

Which of the following is never possible for any function f?

A. f satisfies both P and Q.
B. f satisfies both P and R.
C. f satisfies both Q and R.
D. f satisfies none of P, Q, R.

| Your Answer: | Correct Answer: C | Not Attempted | Time taken: 00min 00sec | Discuss |

Q #23 | Multiple Select Type | Award: 1 | Penalty: 0 | Set Theory & Algebra |

Let R and T be binary relations over the same set A. We'll say that R is "no stronger than" T if the following statement is true:

$$\forall a \in A. \forall b \in A. (aRb \rightarrow aTb)$$

Let R and T be binary relations over the same set A where R is "no stronger than" T.

Then which of the following is/are true?

A. If R is an equivalence relation, then T is an equivalence relation.
B. If T is an equivalence relation, then R is an equivalence relation.
C. If R is a reflexive relation, then T is a reflexive relation.
D. If T is a reflexive relation, then R is a reflexive relation.

| Your Answer: | Correct Answer: C | Not Attempted | Time taken: 00min 00sec | Discuss |

Q #24 | Multiple Choice Type | Award: 1 | Penalty: 0.33 | Algorithms |

Let k be an integer greater than 1. Which of the following represents the order of growth of the expression $\sum_{i=1}^{n} k^i$ as a function of n?

A. $\Theta\left(k^n\right)$
B. $\Theta\left(k^{n\log n}\right)$
C. $\Theta\left(k^n \log n\right)$
D. $\Theta\left(n^{k+1}\right)$

Your Answer:	Correct Answer: A	Not Attempted	Time taken: 00min 00sec	Discuss

Q #25   Multiple Choice Type   Award: 1   Penalty: 0.33   Algorithms

Suppose you have a 2-D grid of dimensions $h \times w$, where h is the height and w is the width. You are at the bottom left corner which is position $(0,0)$ and want to go to the top right corner which is position $(h\text{-}1, w\text{-}1)$. You are only allowed to go right or up.

For example: Given below is 2×2 grid which total 2 paths to go from Position $(0,0)$ to Position $(1,1)$.

Position (0,1)	Position (1,1)
Position (0,0)	Position (1,0)

Similarly, 3×3 has total 6 paths, and so on.

Consider the following algorithm that calculates the number of paths from the bottom left corner to the top right corner of a given grid.

```
    int size(int h, int w) {

        if (h == 0 && w == 0)
            return 0; //base case
5.      if (h == 1 ||w == 1)
            return 1; //base case
        return P
    }
```

What should be substituted at P to ensure the algorithm functions properly?

A. `    size(h-1, w) + size(h, w-1);`

B. `    1+ size(h-1, w-1);`

C. `    1+ 2*size(h-1, w-1);`

D. `    1+(size(h-1, w) + size(h, w-1));`

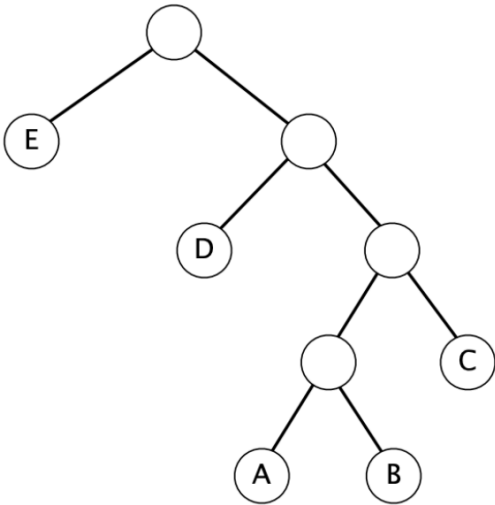| Your Answer:	Correct Answer: A	Not Attempted	Time taken: 00min 00sec	Discuss

Q #26   Multiple Choice Type   Award: 2   Penalty: 0.67   Algorithms

Consider the following Huffman tree of a message over the 5-character alphabet $\{A, B, C, D, E\}$:

Match the following two columns.

Column 1	Column 2
(P) The frequency of A is strictly less than the frequency of B.	(A) True for all messages.
(Q) The frequency of C is greater than or equal to the frequency of A.	(B) False for all messages.
(R) The frequency of D is strictly greater than the frequency of A.	(C) Depends on the message.
(S) The frequency of D is greater than or equal to that of A, B, and C combined.	

A. P-C, Q-A, R-A, S-C
B. P-C, Q-C, R-C, S-C
C. P-C, Q-A, R-C, S-A
D. P-C, Q-C, R-A, S-A

Your Answer: | **Correct Answer: A** | Not Attempted | Time taken: 00min 00sec | Discuss

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Q #27 Multiple Choice Type Award: 2 Penalty: 0.67 Algorithms

Suppose that you have an array of length N consisting of alternating 0's and 1's, starting with 0. For example, below is the array for $N = 16$.

$$0\ 1\ 0\ 1\ 0\ 1\ 0\ 1\ 0\ 1\ 0\ 1\ 0\ 1\ 0\ 1$$

Assume, N is in the power of 2, and The number of comparisons among array elements made by merge sort is represented by $T(N)$.

Which of the following is the correct recurrence for $T(N)$?

A. $T(N) = 2T(N\ /\ 2) + N$
B. $T(N) = 2T(N\ /\ 2) + (1/2)N$
C. $T(N) = 2T(N\ /\ 2) + (3/4)N$
D. $T(N) = 2T(N\ /\ 2) + (1/4)N$

Your Answer: | **Correct Answer: C** | Not Attempted | Time taken: 00min 00sec | Discuss


Q #28 Multiple Choice Type Award: 2 Penalty: 0.67 Algorithms

Assume we have two graphs $G_1 = (V_1, E_1)$ and $G_2 = (V_2, E_2)$. Also assume that we have T_1 which is a MST of G_1 and T_2 which is MST of G_2. Now consider a new graph $G = (V, E)$ such that $V = V_1 \cup V_2$ and $E = E_1 \cup E_2 \cup E_3$ where E_3 is a new set of edges that all cross the cut (V_1, V_2)

Following is an example of what G might look like. The dashed edges are E_3, the solid edges in G_1 (on the left) are T_1, and the solid edges in G_2 (on the right) are T_2.

G1   G2
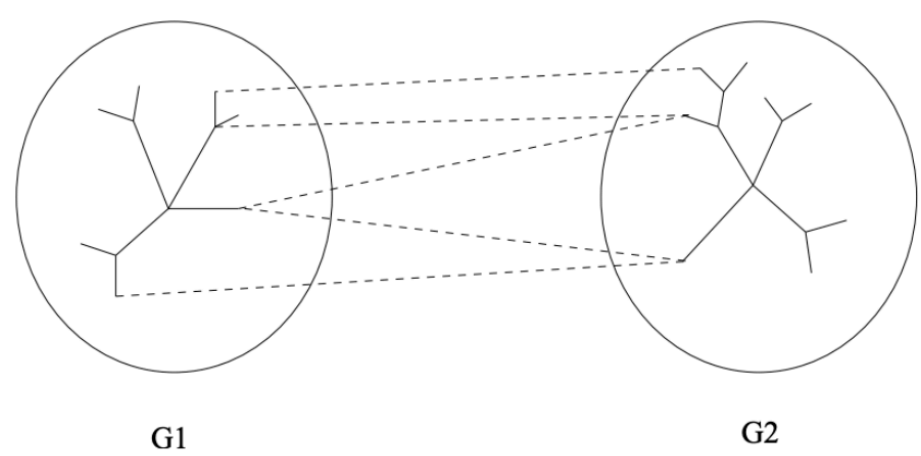
Now assume we want to find a MST of the new graph G. Consider the following algorithm which tries to do this:

Algorithm:
Maybe-MST(T_1, T_2, E_3)
{

    a. $e_{min} = $ a minimum weight edge in E_3
    b. $T = T_1 \cup T_2 \cup \{e_{min}\}$
    c. return T

}

Which of the following assertion is TRUE for the given algorithm?

    A. Algorithm correctly finds out MST for G for any arbitrary graphs G_1 and G_2
    B. Algorithm correctly finds out MST for G only if G_1 and G_2 are tree
    C. If all edges in G_1 and G2 has distinct weights then algorithm correctly finds out MST for G
    D. Algorithm does not calculate MST for G even if G_1 and G_2 are trees with distinct weights

| Your Answer: | Correct Answer: D | Not Attempted | Time taken: 00min 00sec | Discuss |

Q #29   Multiple Choice Type   Award: 2   Penalty: 0.67   DS

A data structure is comprised of nodes each of which has exactly two pointers to other nodes, with no null pointers. The following C program is to be used to count the number of nodes accessible from a given node. It uses a mark field, assumed to be initially zero for all nodes. There is a statement missing from this code.

```
    struct test {int info, mark; struct test *p, *q; }
    int nodecount (struct test *a)
    {
        if (a → mark) return 0;
5.      return nodecount (a → p) + nodecount (a → q) + 1;
    }
```

Which change should be made to make the program work properly?
(It is useful to note that the data structure does not have to be a doubly-linked list)

    A. Add "a $\rightarrow$ mark $= 1$", as the first statement within nodecount function.
    B. Add "a $\rightarrow$ mark $= 1$", after the " if " statement.
    C. Add "a" $\rightarrow$ mark $= 1$", as the last statement within nodecount function.
    D. Add "a $\rightarrow$ mark $= 0$", after the " if " statement.

| Your Answer: | Correct Answer: B | Not Attempted | Time taken: 00min 00sec | Discuss |

Q #30 | Numerical Type | Award: 2 | Penalty: 0 | DS

What is the minimum number of nodes that must be visited in order to find the largest value in an AVL tree of height 4?

| Your Answer: | Correct Answer: 3 | Not Attempted | Time taken: 00min 00sec | Discuss |

Q #31 | Multiple Select Type | Award: 2 | Penalty: 0 | DS

When a graph is traversed using Depth First Search (DFS), the output is a tree known as a Depth First Tree (DFT). Similarly, traversing a graph with Breadth First Search (BFS) results in a tree referred to as a Breadth First Tree (BFT).

Let G_u be a connected undirected graph and s be a vertex in G_u.

We perform either a depth-first search or a breadth-first search on the graph G_u starting at a fixed vertex s.

Consider below statements -

- S1: If G_u is a tree then DFT and BFT are the same for G_u.
- S2: If DFT and BFT are the same for G_u then G_u must be a tree.

Which of the following option(s) is/are CORRECT?

A. S1 is true but S2 is false
B. S1 is false but S2 is true
C. Both are true
D. Both are false

| Your Answer: | Correct Answer: C | Not Attempted | Time taken: 00min 00sec | Discuss |

Q #32 | Multiple Select Type | Award: 2 | Penalty: 0 | Programming in C

Consider the C program fragment which uses a function foo.

```
    main(){
        int *p = foo();
        p = NULL;
        //some other stuff
5.  }
```

foo can be implemented in various following ways, all pieces of code are identical except for their use of free(). Each of them may be correct or they may have a memory leak, dangling pointer or both.

P1:

```
     int *copy(int *src) {
          int *dst = malloc(sizeof(int));
          *dst = *src;
          return dst;
  5. }
     int foo() {
          int a = 3;
          int *b = copy(&a);
          return * b;
 10. }
```

P2:

```
     int *copy(int *src) {
          int *dst = malloc(sizeof(int));
          *dst = *src;
          free (dst);
  5.      return dst;
     }
     int foo() {
          int a = 3;
          int *b = copy( &a);
 10.      return * b;
     }
```

P3:

```
     int *copy(int *src) {
          int *dst = malloc(sizeof(int));
          *dst = *src;
          return dst;
  5. }
     int foo() {
          int a = 3;
          int *b = copy( &a);
          free (b);
 10.      return * b;
     }
```

Which of the following is/are CORRECT?

You should provide an answer for the complete program, which includes combining the main function with a specific implementation of the function foo.

A. $P1$ has Memory leak
B. $P2$ does not have memory leak or dangling pointer
C. $P3$ has Memory leak
D. $P3$ does not have memory leak or dangling pointer

Your Answer: | **Correct Answer: A** | Not Attempted | Time taken: 00min 00sec | Discuss

---

Q #33 | Multiple Select Type | Award: 2 | Penalty: 0 | Compiler Design

Consider the following ambiguous grammar.

1. $E \rightarrow E + E$
2. $E \rightarrow E * E$
3. $E \rightarrow id$

Given below is $SLR(1)$ parsing table M for the above grammar.

```
I₀: E' → ·E
    E → ·E+E
    E → ·E*E
    E → ·id

I₁: E' → E·
    E → E·+E
    E → E·*E

I₂: E → id·

I₃: E → E+·E
    E → ·E+E
    E → ·E*E
    E → ·id

I₄: E → E*·E
    E → ·E+E
    E → ·E*E
    E → ·id

I₅: E → E+E·
    E → E·+E
    E → E·*E

I₆: E → E*E·
    E → E·+E
    E → E·*E
```

state	action				goto
	id	+	*	$	E
0	s2				1
1		s3	s4	acc	
2		r3	r3	r3	
3	s2				5
4	s2				6
5		s3 r1	s4 r1	r1	
6		s3 r2	s4 r2	r2	

As we see that state 5 and state 6 have Shift-Reduce conflicts. We want to manually resolve these conflicts by imposing below precedence and associativity rules.

- $+$ to be left associative
- $*$ to be left associative
- $*$ should have higher precedence than $+$

Which of the following options are CORRECT if we want to apply above described rules?

A. Parser needs to resolve the conflict in $M[5, +]$ in favor of reduce to make $+$ as left-associative.
B. Parser needs to resolve the conflict in $M[5, *]$ in favor of shift to give $*$ as higher precedence than $+$.
C. Parser needs to resolve the conflict in $M[6, +]$ in favor of reduce to give $*$ as higher precedence than $+$.
D. Parser needs to resolve the conflict in $M[6, *]$ in favor of reduce to make $*$ as left-associative.

Your Answer: | **Correct Answer: A;B;C;D** | Not Attempted | Time taken: 00min 00sec | Discuss

---

Q #34 | Multiple Select Type | Award: 2 | Penalty: 0 | Operating System

Ben Bitdiddle wants to implement a concurrent application. Instead of doing the sensible thing and holding a lock while manipulating shared data, Ben decides to be clever. Ben's code, shown below, runs in two separate threads on a computer with two CPUs; no other threads are running on the system. There are three shared global variables, initialized before the threads start: i is initialized to zero, x is initialized to a three-element array of zeros, and binary semaphore x_lock is initialized to one.

Thread 1:

```
    while (i < 3) {
        while (i % 2 == 0);
        P(x_lock);
        x[i] = 1;
5.      i = i + 1;
        V(x_lock);
    }
```

Thread 2:

```
    while (i < 3) {
        while (i % 2 == 1);
        P(x_lock);
        x[i] = 2;
5.      i = i + 1;
        V(x_lock);
    }
```

After both threads reach the end of their code segments, which of the following are possible values for the contents of the x[ ] array?

A. x = 2, 1, 1
B. x = 2, 1, 2
C. x = 2, 2, 1

D. A runtime error could occur if one of the threads attempts to write past the end of the array.

Your Answer: | **Correct Answer: B;D** | Not Attempted | Time taken: 00min 00sec | Discuss

---

Q #35 | Multiple Choice Type | Award: 2 | Penalty: 0.67 | Operating System

A byte-addressable single-level paging system has 32-bit virtual addresses, 24-bit physical addresses, page size of 8 KB, and LRU replacement policy.

A process is allocated four physical pages, numbered $100, 101, 102, 103$. The process makes the following sequence of memory accesses (only the virtual page numbers are shown):

$$0, 1, 0, 0, 1, 1, 0, 4, 4, 0, 3, 3, 0, 6, 7, 7, 6, 1, 1, 0$$

Initially, virtual page 0 is mapped to physical page 100 and no other virtual page is mapped to a physical page.
What is the number of page faults?

A. 5
B. 6
C. 7
D. 8

Your Answer: | **Correct Answer: B** | Not Attempted | Time taken: 00min 00sec | Discuss

---

Q #36 | Numerical Type | Award: 2 | Penalty: 0 | Operating System

A system uses 2 level page tables to implement virtual memory. Outermost page table has 32 entries, each pointing to one page of the innermost page table. Outermost page table entry has a simple format : a valid bit followed by the Physical Frame Number of the page of the page table (if valid). Each page table entry is of 8 bits (including the valid bit). Here are all entries of the outermost page table (wrapped across 2 lines).

| 7f | fe | 7f | 7f | 7f | d4 | 7f | 7f | 7f | 9e | 7f | ad | 7f | 7f | 7f | d6 |
| 7f | 7f | 7f | 7f | 7f | 7f | 7f | e9 | a1 | e8 | 7f | 7f | 7f | 7f | 7f | 7f |

How much space savings (in bytes) does this 2-level page table provide, as compared to flat page table? Assume page size at each level is 32 Bytes.

Your Answer: | **Correct Answer: 736** | Not Attempted | Time taken: 00min 00sec | Discuss

---

Q #37 | Multiple Choice Type | Award: 2 | Penalty: 0.67 | Computer Networks

Consider two nodes, A and B. Suppose the network path from A to B has a bandwidth of 5 KB/s ($5,000$ bytes per second) and a propagation time of 120 msec. The path in the reverse direction, from B to A, has a bandwidth of 10 KB/s and a propagation time of 80 msec. Let data packets have a size (including all headers) of 500 bytes and acknowledgment packets a size of 100 bytes.

What will be the throughput (in Bytes/sec) A can achieve in transmitting to B using Stop-and-Wait? You can treat a 500-byte data packet as transferring 500 bytes of useful data.

A. 1601
B. 1613
C. 1509
D. 1503

Your Answer: Correct Answer: B   Not Attempted   Time taken: 00min 00sec   Discuss

---

Q #38   Multiple Select Type   Award: 2   Penalty: 0   Computer Networks

Suppose a router $R1$ receives an IP packet of 552 bytes, and has to fragment the packet and forward the fragments across a network with an MTU of 300 bytes. Then, a subsequent router $R2$ has to further forward the packet (and/or any resulting fragments) onto another network that has an MTU of 100 bytes. Here, the MTU refers to the size of the largest packet that can be carried in a link-layer frame. Let the size of the TCP header is 20 bytes and that of the IP header is also 20 bytes.

Which of the following is/are CORRECT options regarding the fragments sent by $R1$ and $R2$?

    A. $R2$ will transmit a total of 7 IP fragments.
    B. One of the fragments transmitting from $R2$ has offset field 35.
    C. One of the fragments transmitting from $R2$ has a total length field 32.
    D. $R1$ will transmit a total of 2 IP fragments.

Your Answer: Correct Answer: B;C;D   Not Attempted   Time taken: 00min 00sec   Discuss
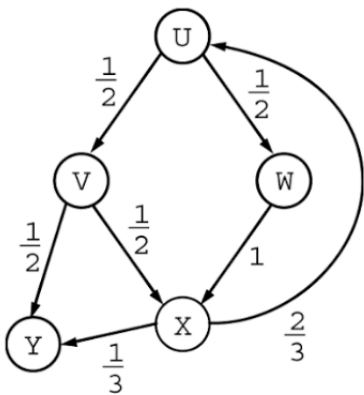

Q #39   Multiple Choice Type   Award: 2   Penalty: 0.67   Probability

Consider the following code and corresponding graph labeled with probabilities. For example, the Boolean expression **if_condition** evaluates to true on one-half of the executions of that expression

```
      do
      {
          U;
          if (if_condition)
  5.      {
              V;
              if (break_condition)
                  break;
          }
 10.      else
              W;
          X;
      }   while (loop_condition);
      Y;
```


Similarly, the Boolean expression **break_condition** evaluates to true with $\dfrac{1}{2}$ probability and **loop_condition** evaluates to true with $\dfrac{2}{3}$ probability .

What is the expected number of times that U executes?

    A. 0.5
    B. 1
    C. 1.5
    D. 2

Your Answer: | **Correct Answer: D** | Not Attempted | Time taken: 00min 00sec | Discuss

---

Q #40 | Multiple Select Type | Award: 2 | Penalty: 0 | Theory of Computation

Which of the following decision problems is decidable?

A. Given a context free grammar G over $\{a, b\}$, does G generate all the strings of the language $\{a, b\}^*$ of length ≤ 2023?

B. Given a context free grammar G over $\{a, b\}$, does G generate all the strings of the language $\{a, b\}^*$ of length greater than 2023?

C. Given a context-free grammar G over $\{a, b\}$, is $L(G) = \{\epsilon\}$? ($L(G)$ is the language generated by G)

D. Given an unrestricted grammar G over $\{a, b\}$, does G generate all the strings of the language $\{a, b\}^*$ of length ≤ 2023?

Your Answer: | **Correct Answer: A;C** | Not Attempted | Time taken: 00min 00sec | Discuss
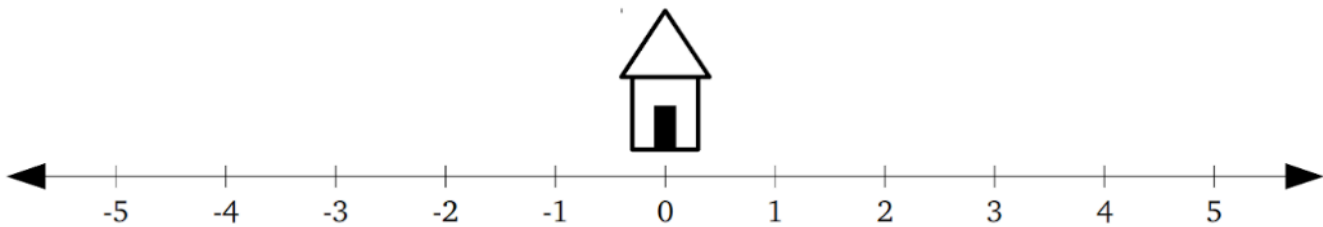

Q #41 | Multiple Select Type | Award: 2 | Penalty: 0 | Theory of Computation

Suppose that you live in a one-dimensional world with your house at position 0, as shown here:

One day, you decide to go for a walk by taking steps of size ± 1 forward and backward. You begin at your house and, after completing your walk, end up back at your house.

Consider the alphabet $\Sigma = \{\mathbf{L}, \mathbf{R}\}$. A string in Σ^* describes a possible walk where at each step you either move a step left (L) or a step right (R). For example, the string "LRRRLL" means that you take a step left, then three steps right, then two steps left.

Let $\mathrm{L} = \{w \in \Sigma^* \mid w$ describes a series of steps in which you arrive at the same place at which you started $\}$. Which of the following CFGs(Context-Free Grammars) does not generate language L?

A. $\mathrm{S} \to \mathrm{LSR} \mid \mathrm{SLR} | \varepsilon$
B. $\mathrm{S} \to \mathrm{LRS} \mid \mathrm{RLS} \mid \varepsilon$
C. $\mathrm{S} \to \mathrm{LRSRL} \mid \mathrm{RLSLR} \mid \varepsilon$
D. $\mathrm{S} \to \mathrm{SLRS} \mid \mathrm{SRLS} \mid \varepsilon$

Your Answer: | **Correct Answer: A;B;C;D** | Not Attempted | Time taken: 00min 00sec | Discuss

---

Q #42 | Numerical Type | Award: 2 | Penalty: 0 | Theory of Computation

If w is a string over some alphabet A then we say that w has $|w|$ positions in it. Empty string has 0 positions. For instance, the string $abaab$ has five positions, 1 to 5, where position 1 has symbol a, position 5 has symbol b. For any string w, Let $\mathrm{Q}(a, x)$ be a predicate defined as "symbol a is at position x", where x ranges over the positions of w. For instance, for a string $w \in \{a, b\}^*$, the property "all symbols are a" is formalized by the formula $\forall x \mathrm{Q}(a, x)$. In order to express relations between positions we add to the syntax the predicate $x < y$, with intended meaning "position x is smaller than (i.e. lies to the left of) position y". Let L be a language over the alphabet $\{a, b\}$ such that the strings in L are described by the given expression:
$\forall x (\mathrm{Q}(a, x) \to \exists y (y > x \land \mathrm{Q}(b, y)))$ where domain for the variables x, y is the set of positions of the

respective string. For instance, if $w = aaba$ then domain for x, y will be the set containing $1, 2, 3, 4$. The number of states in the minimal DFA(Deterministic Finite Automaton) which accepts the language L is _____

Your Answer: **Correct Answer: 2**   Not Attempted   Time taken: 00min 00sec   Discuss
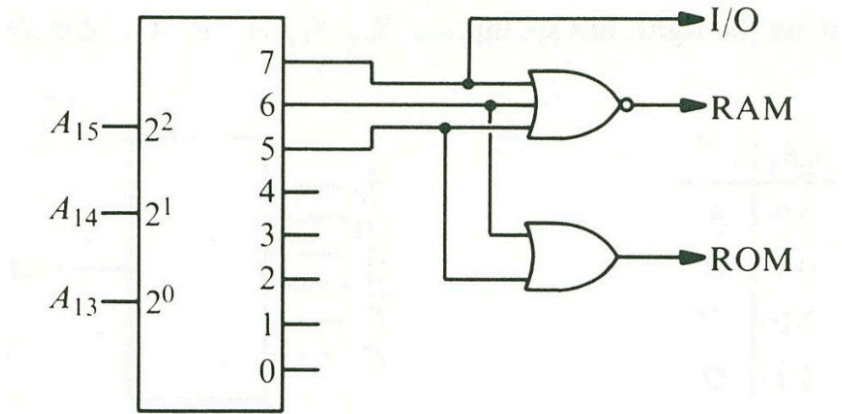

Q #43   Multiple Choice Type   Award: 2   Penalty: 0.67   CO and Architecture

The 64 K address space of a certain microcomputer is accessed by address signals $A_{0'}, A_1, \ldots, A_{14}, A_{15}$ (Where A_0 is the least significant bit and A_{15} is the most significant bit) and is divided equally among read-only memory(ROM), read-write memory(RAM), and input-output registers((IO) by means of the decoder and gates as shown above. Note that only the three high order outputs of the decoder are used. Output $i(0 \le i \le 7)$ of the decoder is 1 if and only if the binary value of the inputs $A_{15}A_{14}A_{13}$ is i. Which of the following correctly indicates the beginning and ending hexadecimal addresses of the three portions of the address space?

   A. ROM (0000 - 3FFF), RAM (0000 - 9FFF), I/O (E000 - FFFF)
   B. ROM (0000 - 9FFF), RAM (A000 - DFFF), I/O (E000 - FFFF)
   C. ROM (A000 - DFFF), RAM (0000 - 9FFF), I/O (E000 - FFFF)
   D. ROM (4000 - 4FFF), RAM (6000 - FFFF), I/O (0000 - 3FFF)

Your Answer: **Correct Answer: C**   Not Attempted   Time taken: 00min 00sec   Discuss

---

Q #44   Multiple Choice Type   Award: 2   Penalty: 0.67   CO and Architecture

Consider a computer design in which multiple processors, each with a private cache memory, share global memory using a single bus. This bus is the critical system resource.

Each processor can execute one instruction every 500 nanoseconds as long as memory references are satisfied by its local cache. When a cache miss occurs, the processor is delayed for an additional $2,000$ nanoseconds. During half of this additional delay, the bus is dedicated to serving the cache miss. During the other half, the processor cannot continue, but the bus is free to service requests from other processors. On average, each instruction requires 2 memory references. On average, cache misses occur on 1 percent of references.

What proportion of the capacity of the bus would a single processor consume, ignoring delays due to competition from other processors?

   A. $\frac{1}{50}$
   B. $\frac{1}{27}$
   C. $\frac{1}{25}$
   D. $\frac{2}{27}$

Your Answer: **Correct Answer: B**   Not Attempted   Time taken: 00min 00sec   Discuss
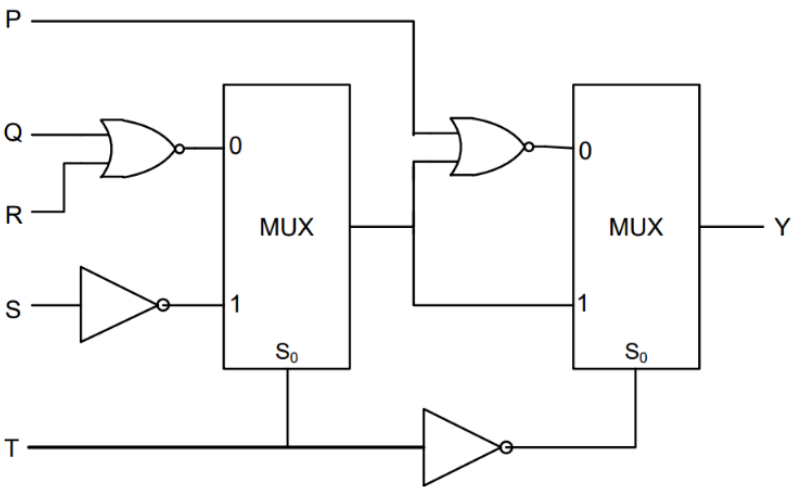

Q #45 Numerical Type Award: 2 Penalty: 0 Digital Logic

For the circuit shown in the figure, the delays of NOR gates, multiplexers and inverters are 2 ns, 1.5 ns and 1 ns, respectively. If all the inputs P, Q, R, S and T are applied at the same time instant, the maximum propagation delay (in ns) of the circuit is _____

Your Answer: **Correct Answer: 6** Not Attempted Time taken: 00min 00sec Discuss

Q #46 Multiple Choice Type Award: 2 Penalty: 0.67 Databases

Consider the following transaction interleaving S of transactions T_1, T_2, T_3 :

T_1	T_2	T_3
	$Write(X)$	
$Writes(Z)$		
$Writes(X)$		
$Commit$		
	$Writes(Y)$	
	$Reads(Y)$	
		$Writes(Z)$
		$Writes(M)$
		$Commit$
	$Reads(M)$	
	$Commit$	

Which one of the following statements is CORRECT?

    A. S is conflict-serializable but not recoverable.
    B. S is not conflict-serializable but is recoverable.
    C. S is both conflict-serializable and recoverable.
    D. S is neither conflict-serializable nor is it recoverable.

Your Answer: **Correct Answer: B** Not Attempted Time taken: 00min 00sec Discuss

Q #47 Multiple Choice Type Award: 2 Penalty: 0.67 Databases

Consider the following database relations :

- **Enrolled(Student*, Course)**: It contains the courses that each student has enrolled into and
- **Mandatory(Course*)**: It contains the courses that are necessary to enroll into, to graduate.

Assume there are No null values in any relation. Primary keys of relations are shown by "*".

Consider the following query :

```
SELECT Student
From Enrolled
GROUP BY Student
HAVING COUNT(*) = (SELECT COUNT(*) FROM Mandatory);
```

What is the output of this query?

A. Finds all students who have enrolled into some of the courses that are necessary to graduate.
B. Finds all students who have enrolled into all the courses that are necessary to graduate.
C. Finds all students who haven't enrolled into some of the courses that are necessary to graduate.
D. None of these

| Your Answer: | Correct Answer: N/A | Marks To All | Time taken: 00min 00sec | Discuss |

Q #48 | Numerical Type | Award: 2 | Penalty: 0 | Databases

A B-Tree of order m is an m-way search tree in which every node, except the root node, has at least $m/2$ children. The height of a one-level tree is defined to be 0, the height of a tree with two levels is defined to be 1, and so on. What is the maximum number of distinct keys (or records) stored in a B Tree of height 5 and order 5?

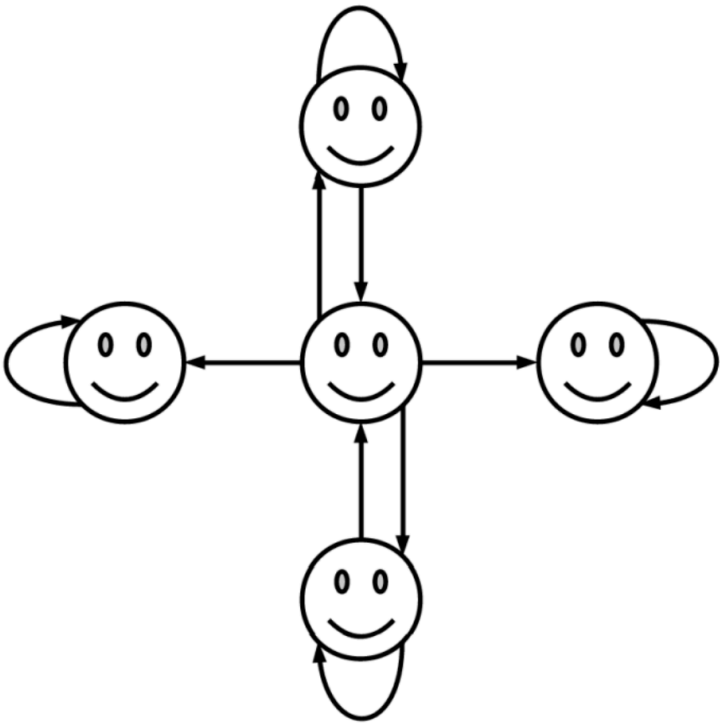| Your Answer: | Correct Answer: 15624 | Not Attempted | Time taken: 00min 00sec | Discuss |

Q #49 | Multiple Select Type | Award: 2 | Penalty: 0 | Mathematical Logic

Below is a drawing(graph representation) of a binary relation R over a set of people A:

Which of the following first-order logic statements about R, is true?

A. $\forall p \in A.\, \exists q \in A.\, pRq$
B. $\exists p \in A.\, \forall q \in A.\, pRq$
C. $\exists p \in A.\, (pRp \rightarrow \forall q \in A.\, qRq)$
D. $\neg\forall p \in A.\, \forall q \in A.\, (p \neq q \rightarrow \exists r \in A.\, (pRr \land qRr))$

| Your Answer: | Correct Answer: A;C;D | Not Attempted | Time taken: 00min 00sec | Discuss |

Q #50 | Numerical Type | Award: 2 | Penalty: 0 | Graph Theory

The triangular graph of order $n \geq 3$, denoted T_n, is a graph defined as follows. Begin with the set $\{1, 2, 3, \ldots, n\}$, where $n \geq 3$. The nodes in T_n are the two-element subsets of $\{1, 2, 3, \ldots, n\}$, and there's an edge between any two sets that have exactly one element in common. The number of edges in T_n for $n = 8$?

Your Answer: | Correct Answer: 168 | Not Attempted | Time taken: 00min 00sec | Discuss

Q #51 | Multiple Choice Type | Award: 2 | Penalty: 0.67 | Combinatory

Suppose there are ten balls in an urn, four blue, four red, and two green. The balls are also numbered 1 to 10. You are asked to select an ordered sample of four balls without replacement. Let $B \geq 0$ be the number of blue balls, $R \geq 0$ be the number of red balls, and $G \geq 0$ be the number of green balls in your sample.

How many ways are there to select such a sample if exactly one of B, R, or G must be zero?

 A. 256
 B. 1152
 C. 1446
 D. 2304

Your Answer: | Correct Answer: D | Not Attempted | Time taken: 00min 00sec | Discuss

Q #52 | Numerical Type | Award: 2 | Penalty: 0 | Combinatory

For $x \geqq 0, y \geqq 0$, define $A(x, y)$ by

$$A(0, y) = y + 1$$
$$A(x + 1, 0) = A(x, 1), \text{ and}$$
$$A(x + 1, y + 1) = A(x, A(x + 1, y))$$

Then $A(1, 100)$ is ?

Your Answer: | Correct Answer: 102 | Not Attempted | Time taken: 00min 00sec | Discuss

Q #53 | Multiple Choice Type | Award: 2 | Penalty: 0.67 | CO and Architecture

A classical RISC five-stage pipeline is depicted below:

instruction fetch	register fetch	execute	memory access	register write back

The pipeline has the following characteristics.

- The register file is written at the end of the clock cycle.
- The pipeline does not have other bypassing/forwarding hardware.

Consider the following sequence of assembly instructions:

```
   #1: ADD R1, R2, R3
   #2: SUB R4, R1, R5
   #3: AND R6, R1, R7
   #4: OR R8, R1, R9
5. #5: XOR R10, R1, R11
```

In all the above instructions, the destination register is the first (leftmost) register.

A read-after-write(RAW) data dependency occurs when a later instruction requires an input value that is set by an earlier instruction. A RAW data hazard occurs when one instruction writes a value into a register that will be used as input by a later instruction, but that value does not actually appear in the register by the cycle on which the later instruction attempts to read it.

Note that a RAW data hazard always implies a RAW data dependency, but some RAW data dependencies do not imply a RAW data hazard.

Identify the data hazards that would prevent the given sequence of instructions from executing correctly on the given hardware design above, unless the compiler inserted one or more nop instructions for correct execution.

Which of the following statements is correct?

    A. Every RAW dependency in the given program is a RAW data hazard for the given pipeline.
    B. The number of RAW dependencies in the given program is 4 but only 1 of them is a RAW data hazard for the given pipeline.
    C. The number of RAW dependencies in the given program is 4 but only 3 of them are RAW data hazards for the given pipeline.
    D. The number of RAW dependencies in the given program is 1 and it is a RAW data hazard for the given pipeline.

Your Answer: | **Correct Answer: C** | Not Attempted | Time taken: 00min 00sec | Discuss

---

Q #54 | Multiple Choice Type | Award: 2 | Penalty: 0.67 | CO and Architecture

Consider the following instruction sequence for a hypothetical $RISC$ processor.

    T. R1 $\leftarrow$ R2 + R3
    U. R4 $\leftarrow$ R5 + R6
    V. R5 $\leftarrow$ R7 + R8
    W. R9 $\leftarrow$ R5 + R1
    X. R10 $\leftarrow$ R4 + R1
    Y. R11 $\leftarrow$ R10 + R1
    Z. R9 $\leftarrow$ R1 + R4

Which of the following is a possible legal execution order for the instructions on an out-of-order processor without register renaming?

    A. T, U, X, V, W, Z, Y
    B. T, U, X, V, Z, W, Y
    C. T, V, U, X, W, Y, Z
    D. U, T, V, Y, X, W, Z

Your Answer: | **Correct Answer: A** | Not Attempted | Time taken: 00min 00sec | Discuss

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Q #55 | Multiple Choice Type | Award: 2 | Penalty: 0.67 | CO and Architecture

Consider the following code executed on a machine with a direct mapped cache of size 512 bytes and block size 16 bytes.

```
    int x[2][128];
    int i;
    int sum = 0;
    for (i = 0; i < 128; i++) {
5.      sum += x[0][i] * x[1][i];
    }
```

Assume this code is executed under the following conditions:

- sizeof(int) $= 4$.

- Array x begins at memory address 0x0 and is stored in row-major order.
- The cache is initially empty.
- The only memory accesses are to the entries of the array x. All other variables are stored in registers.

What will be the cache miss rate?

A. 12.5%
B. 25%
C. 50%
D. 100%

Your Answer: **Correct Answer: D** Not Attempted Time taken: 00min 00sec Discuss

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