

**Q 13** What will be the output of the following pseudocode?

```
1. 1. int a = 9, b = 7, c = 8, d = 4, e  
2. 2.e = a + b + c + d / 4  
3. 3. if ( e > 5)  
4. 4.         print "PASS"  
5. 5. else  
6. 6.         print "FAIL"
```

**Ops:** A.  1

B.  PASS

C.  FAIL

D.  0



**Q 16** What will be the output of the following pseudocode?

```
1. 1. int a = 3, b = 2
2. 2. if ( a + b < 7 )
3. 3.         a = a * 0 + b
4. 4. else
5. 5.         for(i = 1 to 4)
6. 6.                 a = a + i
7. 7.     end for loop
8. 8. Print a, b + 1
```

**Ops:** A.  2 3

- B.  None of the mentioned options
- C.  4 3
- D.  3 3

**Q 18** What will be the output of the following pseudocode?

```
1. int p = 2, q = 6, r = 9, i
2. if ( r > p + q )
3.     for ( i = 1 to 3 )
4.         p = p + q
5.         q = q + 1
6.     end for loop
7.    r = p - q
8. print p, q and r
9.
```

- Ops:
- A.  32 10 22
  - B.  23 9 9
  - C.  15 8 7
  - D.  23 9 14

**Q 20** What will be the output of the following pseudocode?

```
1. 1. int a = 15, b = 45, c = 9, i
2. 2. if (( c > (a + b) ) OR a < ( 5 * c ))
3. 3.     for( i = 1 to 3)
4. 4.         c = c * 2
5. 5.     End for loop
6. 6. else
7. 7.     while ( a > 6)
8. 8.         b = b + 1
9. 9.         a = a - 4
10. 10.    end while loop
11. 11. Print b, c
```

[Note: OR - The logical OR operator returns the boolean value true if either or both operands are true and returns false otherwise.]

- Ops:
- A.  48, 9
  - B.  45, 72
  - C.  45, 9
  - D.  41, 4

**Q 20** What will be the output of the following pseudocode for a = 2?

```
1. fun(int a)
2.     if(a < 1)
3.         return
4.     else
5.         Print a
6.         fun(a-1)
7.         Print a
8.     return
```

- Ops:
- A.  1 2
  - B.  3 2 1 1 2 3
  - C.  2 1 1 2
  - D.  2 1

**Q 11** What will be the output of the following pseudocode if the value of n1 and n2 are 12 and 30 respectively?

```
1. 1. Declare integer variables n1, n2, i, j and flag
2. 2. Read the values of n1 and n2
3. 3. for i = n1+1 to (n2 - 1)
   3.1 Set flag = 1
5. 3.2 for j=2 to i/2
   3.2.1 if (i mod j) = 0 then Set flag =0
7.           break
8.       End if
9.   End for
10. 3.3 if flag = 1 then Print i
11.  end if
12. 3.4 Set i=i+1
13. End for
14. 4. Stop
```

[Note: mod finds the remainder after the division of one number by another. For example, the expression "5 mod 2" would evaluate to 1 because 5 divided by 2 leaves a quotient of 2 and a remainder of 1]

**Ops:** A.  Will print all the values from 12 to 30

B.  12 15 18 21

C.  13 15 17 19 21 23 25 27 29

D.  13 17 19 23

**Q 16** What will be the output of the following pseudocode?

```
1. Integer a , b , c
2. Set a = 10, b = 20
3. for (c = a; c <= b; c = c + 2)
4.         a = a + c
5.         b = b - a + c
6.         if (a > 10)
7.             Print a
8.         else
9.             Print b
10.        end if
11.    end for
```

**Ops:** A.  20 23

B.  20

C.  22

D.  20 32

**Q 25** What will be the output of the following pseudocode?

```
1. Integer a, b, c, a1, b1, c1, a2, b2, c2
2. Set a1 = 2, b1 = 45 and c1 = 36
3. Set a2 = 11, b2 = 26 and c2 = 30
4. c = c1 + c2
5. b = c / 60
6. c = c mod 60
7. b = b + b1 + b2
8. a = b / 60
9. b = b mod 60
10. a = a + a1 + a2
11. Print a:b:c
```

**Ops:** A.  13:12:66

B.  14:12:6

C.  13:71:66

D.  14:12:1

**Q 22** What will be the output of the following pseudocode for num=5456?

```
1. 1. Start
2. 2. Take a variable num, j, temp and an array digit[ ]
3. 3. Set k=0, len=0, n=num
4. 4. Repeat while n is not equal to 0
5.   4.1 digit[k]=n mod 10
6.   4.2 Set n=n/10
7.   4.3 Set k=k+1
8. End While
9. 5. len=k
10. 6. Set k=0
11. 7. Repeat for k to len-1
12.   7.1 Check If digit[k] is greater than digit[k+1]
13.     7.1.1 Set temp=digit[k]
14.     7.1.2 Set digit[k]=digit[k+1]
15.     7.1.3 Set digit[k+1]= temp
16.     7.1.4 Repeat for j=0 to len
17.       7.1.4.1 Set num= num+ (digit[j]* pow(10,k))
18.   End for
19. End If
20. End For
```

**Q 13** What will be the output of the following pseudocode?

```
1. Integer a , b
2. Set a = 2, b = 50
3. while( b > 0 )
4.         a = b MOD 2 + a
5.         if ( a MOD 3 IS EQUAL TO 0 )
6.             Print (a)
7.         else
8.             Print (b - 1)
9.         b = b / 5
10.        a = a + 1
11.    end while
```

**Ops:** A.  50 10 2

B.  49 3 1

C.  50 3 2

D.  3 3 3

**Q 12** What will be the output of the following pseudocode?

```
1. Integer i, j, sum, n      ↴
2. Set sum=0, n=7
3. Repeat for i = 1 to n
4.     sum = sum + ( i * i)
5. End loop
6. Print sum
```

- Ops:**
- A.  204
  - B.  64
  - C.  8
  - D.  49

**Q 13** What will be the output of the following pseudocode?

1. 1. int j = 41, k = 37
2. 2. j = j + 1
3. 3. k = k - 1
4. 4. j = j / k
5. 5. k = k / j
6. 6. print k, j

**Ops:** A.  1 1

B.  1 36

C.  36 1

D.  42 36

**Q 24** What will be the output of the following pseudocode?

**Input:** Two  $n$ -bit integers  $x$  and  $y$ , where  $y \geq 1$

```
2 if x = 0 then
3   | return (q, r) = (0, 0)
4 else
5   | set (q, r) = divide( $\lfloor \frac{x}{2} \rfloor$ , y);
6   | q = 2 × q, r = 2 × r;
7   | if x is odd then
8     |   | r = r + 1
9   | end
10  | if r ≥ y then
11    |   | r = r - y, q = q + 1
12  | end
13  | return (q, r)
14 end
```

- Ops:**
- A.  The quotient of 'x divided by y' operation
  - B.  The quotient and remainder of 'x divided by y' operation
  - C.  The remainder of 'x divided by y' operation
  - D.  None of the mentioned options

**Q 6** What will be the output of the following pseudocode?

```
1. 1. Declare Integer c, d, r
2. 2. Integer array[6]={23, 45, 67, 12, 13 25}
3. 3. for(c=0; c < 5; c++)
4. 4.     for(d=0; d < 5-c-1 ; d++)
5. 5.         if(array[d]>array[d+1])
6. 6.             r = array[d];
7. 7.             array[d] = array[d+1]
8. 8.             array[d+1]=r
9. 9.         end if
10. 10.    end for
11. 11. end for
12. 12. for(c =0; c<5 ; c++)
13. 13.     print array[c]
14. 14. end for
```

- Ops:**
- A.  67 45 23 13
  - B.  67 45 23 13 12
  - C.  45 67
  - D.  12 13 23 45 67

**Q 25** What will be the output of the following pseudocode?

```
1. 1. int a = 2, b = 3, c = 3, d = 4
2. 2. if(d < 5 & d > ( c = a + b ))
3. 3.     Print A
4. 4. else
5. 5.     Print B
6. 6. Print c
```

Ops: A.  B 3

B.  B 5

C.  A 3

D.  A 5

**Q 19** What will be the output of the following pseudocode for the input  $n = 6745$ ?

1. 1. Start
2. 2. Read  $n$
3. 3. Assign the given integer to a new variable  $q$  (i.e.  $q=n$ ) and set  $rn=0$
4. 4.  $rn = rn * 10 + r;$
5. 5.  $rn = rn * 10 + r;$
6. 6.  $q=q/10$
7. 7. Repeat steps 4 to 6 while  $q>0$
8. 8. Print  $rn$

[Note: 'mod' finds the remainder after the division of one number by another. For example, the expression "5 mod 2" would evaluate to 1 because 5 divided by 2 leaves a quotient of 2 and a remainder of 1]

Ops:

- A.  5476
- B.  7645
- C.  3423 
- D.  4567

**Q 14** What will be the output of the following pseudocode?

```
1. 1. int a = 10, b = 4, i
2. 2. if( a > b )
3. 3.     if ( a + b > 14 )
4. 4.         print a
5. 5.     else
6. 6.         for ( i = 1 to 3 )
7. 7.             a = a + i
8. 8.         end for loop
9. 9.         print a
10. 10. else
11. 11.     print b
```

Ops: A.  4

B.  14

C.  16

D.  10

**Q 14** What will be the output of the following pseudocode for input 4?

```
1. int sum(int num) {  
2.     if (num is not equal to 0)  
3.         return num + num * sum(num-1)  
4.     else  
5.         return num  
6. }
```

- Ops:
- A.  26
  - B.  15
  - C.  44
  - D.  64

**Q 11** What will be the output of the following algorithm for the input  $x=22$  and  $y=3$ ?

```
1.  
2. 1. Start  
3. 2. Declare x, y, m, n  
4. 3. Set m = x and n = y  
5. 4. while m not equal to n then  
6. 5.     if m greater than n  
7. 6.         m = m - 1  
8. 7.     otherwise  
9. 8.         n = n - 1  
10. 9.     End if  
11. 10. End while  
12. 11. print n
```

**Ops:** A.  4

B.  None of the mentioned options

C.  12

D.  3

**Q 25** What will be the output of the following pseudocode for num=5456?

1. 1. Start
2. 2. Take a variable num, j, temp and an array digit[ ]
3. 3. Set k=0, len=0, n=num
4. 4. Repeat while n is not equal to 0
5.     4.1 digit[k]=n mod 10
6.     4.2 Set n=n/10
7.     4.3 Set k=k+1
8. End While
9. 5. len=k
10. 6. Set k=0
11. 7. Repeat for k to len-1
12.     7.1 Check If digit[k] is greater than digit[k+1]
13.         7.1.1 Set temp=digit[k]
14.         7.1.2 Set digit[k]=digit[k+1]
15.         7.1.3 Set digit[k+1]= temp
16.         7.1.4 Repeat for j=0 to len
17.             7.1.4.1 Set num= num+ (digit[j]\* pow(10,k))
18.     End for
19. End If
20. End For
21. 8. Print num
22. 9. Stop

**Q 23** What will be the output of the following pseudocode if we call **fun1()** and the value of n is 5?

```
1. 1. fun(int n, int a)
2. 2.         if ( n == 0) return a
3. 3.         return fun ( n - 1, n * a)
4. 4. fun1( int n)
5. 5.         return fun( n, 1)
```

- Ops:
- A.  15
  - B.  16
  - C.  120
  - D.  24

**Q 21** What will be the output of the following pseudocode?

```
1. Integer a , b , c
2. Set a = 10, b = 20
3. for (c = a; c <= b; c = c + 2)
4.         a = a + c
5.         b = b - a + c
6.         if (a > 10)
7.             Print a
8.         else
9.             Print b
10.        end if
11.    end for
```

**Ops:** A.  20 32

B.  20

C.  22

D.  20 23 ↴

**Q 15** What will be the output of the following pseudocode?

```
1. 1. Input a = 6, b=9
2. 2. Integer n
3. 3. Set res = 1
4. 4. if (a > 10 && b< a)
5. 5.     Print Error Message
6. 6. else
7. 7.     for(n=a; n<b ; n=n+1)
8. 8.         res = res * n
9. 9.     End for loop
10. 10. Print res
```

Note: '&&' operator returns true if and only if both expressions inside **if( )** are true.

Example:

```
1.
2. if(6>5 && 12<10) →
3.     print true
4. else
5.     print false
```

**Q 14** What will be the output of the following pseudocode for a = 3?

```
1. 1. void fun(int a)
2. 2. if(a<1)
3. 3.     return;
4. 4. else
5. 5.     print a
6. 6.     fun(a-2)
7. 7.     print a
8. 8.     return
```

Ops: A.  1 2

B.  3 1 1 3

C.  2 1 1 2

D.  2 1 0



**Q 11** What will be the output of the following pseudocode?

```
1. Integer a = 1, b = 2
2. for ( int i = 0; i <= 6; i = i + 2 )
3.     d = a + b + i
4.     a = a + b
5.     b = a - b
6.     Print b
7. end for
```

Ops: A.  3 9 23 70

B.  3 7 10

C.  3 10 27 71

D.  3 10 27 70

**Q 13** What will be the output of the following pseudocode?

```
1. 1. int a = 2, b = 3
2. 2. int result = 1
3. 3. while (b != 0)
4. 4.         result = result * a
5. 5.         b=b-1
6. 6. end while
7. 7. if( result >5 )
8. 8.         a = a -1
9. 9. else
10. 10.        a = a + 1
11. 11. Print result, a
```

**Ops:** A.  8 1

B.  7 3

C.  3 4

D.  6 1

**Q 25** What will be the output of the following pseudocode?

1. 1. int p = 4, q = 7, r = 10
2. 2. p = q mod r
3. 3. q = q + p
4. 4. r = r + q
5. 5. Print p, q and r



**Ops:** A.  7 11 17

B.  4 11 17

C.  7 14 24

D.  7 14 21

**Q 14** What will be the output of the following pseudocode?

```
1.  
2. 1. Input f = 6, g = 9 and set sum = 0  
3. 2. Integer n  
4. 3. if ( g > f)  
5. 4.     for(n = f ; n < g ; n = n+1)  
6. 5.         sum = sum + n  
7. 6.     End for loop  
8. 7. else  
9. 8.     Print Error Message  
10. 9. Print sum
```

- Ops:**
- A.  21
  - B.  15
  - C.  9
  - D.  6



**Q 24** What will be the output of the following pseudocode ?

```
1. 1.int m = 0 , n=13, flag = 0, i
2. 2. m = n/2
3. 3. for ( i = 2 to m)
4. 4.         if ( n mod i = 0)
5. 5.                 flag = 1
6. 6.             go to line number 9
7. 7. end if
8. 8. end for loop
9. 9. if( flag = 0)
10. 10.     print n
11. 11. else print 1
```

- Ops:**
- A.  6
  - B.  0
  - C.  1
  - D.  13

**Q 14** What will be the output of the following pseudocode?

```
1. Integer a , b , c
2. Set a = 10, b = 20
3. for (c = a; c <= b; c = c + 2)
4.     a = a + c
5.     b = b - a + c
6.     if (a > 10)
7.         Print a
8.     else
9.         Print b
10.    end if
11. end for
```

Ops: A.  20

B.  22

C.  20 23

D.  20 32

**Q 16** What will be the output of the following pseudocode?

```
1. Integer a , b
2. Set a = 125, b = 122
3. if( (a + b) MOD 2 NOT EQUALS 0 )
4.     while ( a > 0 )
5.         b = a + b
6.         a = a / 5
7.     End while
8.     Print b
9. else
10.    a = a - b
11.    a = a / 2
12.    Print a
13. end if
```



**Ops:** A.  278

B.  234

C.  274

D.  2

**Q 11** What will be the output of the following pseudocode?

```
1. Integer y , z , k , c
2. Set y = 8, z = 3, k = 1
3. if ( z + k < y )           ↗
4.     if( z MOD 2 NOT EQUALS 0 )
5.         c = y + z
6.     else
7.         c = y + k
8.     y = y + z + k + c
9. else
10.    y = y + c + k
11. end if
12. Print y
```

Ops: A.  8

B.  23

C.  20

D.  21

**Q 20** What will be the output of the following pseudocode for a = 3?

```
1. 1. void fun(int a)
2. 2. if(a<1)
3. 3.     return;
4. 4. else
5. 5.     print a
6. 6.     fun(a-2)
7. 7.     print a
8. 8.     return
```

- Ops:
- A.  2 1 0
  - B.  3 1 1 3
  - C.  1 2
  - D.  2 1 1 2

**Q 17** What will be the output of the following pseudocode for  $p = 3, q = 4$ ?

```
1. 1.int fun1 ( int p, int q)
2. 2.if ( q EQUALS 0)
3. 3.      return 0
4. 4.if ( q mod 2 EQUALS 0)
5. 5.      return fun1 ( p + p, q / 2)
6. 6.return fun1 ( p + p, q / 2) + p
```

- Ops:**
- A.  None of the mentioned options
  - B.  8
  - C.  7
  - D.  12

**Q 24** What will be the output of the following pseudocode?

1. 1. int j = 41, k = 37
2. 2. j = j + 1
3. 3. k = k - 1
4. 4. j = j / k
5. 5. k = k / j
6. 6. print k, j

Ops: A.  1 1

B.  42 36

C.  1 36

D.  36 1

**Q 12** What will be the output of the following pseudocode?

1. 1. int p = 4, q = 7, r = 10
2. 2. p = q mod r
3. 3. q = q + p
4. 4. r = r + q
5. 5. Print p, q and r

Ops: A.  4 11 17



- B.  7 14 24
- C.  7 11 17
- D.  7 14 21

**Q 14** What will be the output of the following algorithm?

```
1.  
2. 1. Start  
3. 2. Declare a, I and b  
4. 3. for I = 0 to 4  
5. 4.     Increment a by 1  
6. 5. if I = 3 then  
7. 6.     Print hello  
8. 7.     Get out of the loop  
9. 8. End if  
10. 9. End for  
11. 10. Print a
```

Ops: A.  hello4

B.  hello

C.  1

D.  4



**Q 11** What will be the output of the following pseudocode?

1. 1. int i, N = 5
2. 2. int sum = 0
3. 3. for( i = 1 to 5)
4. 4.           sum = sum + ( i \* i )
5. 5. print sum

**Ops:** A.  70

B.  65

C.  25

D.  55

**Q 17** What will be the output of the following pseudocode?

```
1. Integer a = 3, b = 13, c = 14, d = 7, i, j
2. if(a+c > b+d)
3.     for(i = a to d)
4.         c = c + i + b
5.         i = i + 1
6.     end for
7.     Print c
8. else
9.     for(int j = b to c)
10.        a = a + j + d
11.        j = j + 1
12.    end for
13.    Print a
```



- Ops:
- A.  32
  - B.  23
  - C.  46
  - D.  44

**Q 2** What will be the output of the following code?

```
1.  
2. main()  
3. {  
4.     int num[] = {1,4,8,12,16};  
5.     int *a,*b;  
6.     int i;  
7.     a = num;  
8.     b = num+2;  
9.     i = *a++;  
10.    printf("%d, %d, %d\n",i, *a, *b);  
11. }
```

Ops: A.  1,4,8



B.  2,4,8

C.  4,4,8

D.  2,1,8

**Q 11** What will be the output of the following algorithm?

```
1.  
2. 1. Start  
3. 2. Declare a, I and b  
4. 3. for I = 0 to 4  
5. 4.     Increment a by 1  
6. 5.     if I = 3 then  
7. 6.         Print hello  
8. 7.         Get out of the loop  
9. 8.     End if  
10. 9. End for  
11. 10. Print a
```

- Ops:**
- A.  1
  - B.  hello
  - C.  4
  - D.  hello4

**Q 11** What will be the output of the following pseudocode?

1. 1.int m = 3, n = 2, o = 4
2. 2.while ( n > 0 )
3. 3. m = m \* o + n ;
4. 4. n = n - 1
5. 5.end while loop
6. 6. o = o + m
7. 7.print m, n, o

- Ops:**
- A.  3 2 4
  - B.  2 3 4
  - C.  1 0 5
  - D.  2 1 6

**Q 1** What will be the output of the following C code?

```
1.  
2. #include <stdio.h>  
3. void main()  
4. {  
5.     int x = 9, y = 2, z = 6;  
6.     int a = x & y | z;  
7.     printf("%d", a);  
8. }
```

- Ops:
- A.  2
  - B.  6
  - C.  0
  - D.  3



**Q 17** What will be the output of the following algorithm for Num=10?

- 1.
2. 1. Start
3. 2. Declare variable I, J and Num
4. 3. Enter value of Num
5. 4. Repeat for I=1 to Num
6.     4.1 Declare static variable sap and Set sap=0
7.     4.2 sap=sap+I
8.     4.3 J=sap
9. end loop
10. 5. Print J



Note: static allows the last value of the variable to be preserved between successive function calls.

- Ops:**
- A.  65
  - B.  85
  - C.  75
  - D.  55

**Q 24** What will be the output of the following pseudocode?

1. 1. int p = 4, q = 7, r = 10
2. 2. p = q mod r
3. 3. q = q + p
4. 4. r = r + q
5. 5. Print p, q and r

**Ops:** A.  4 11 17

B.  7 14 21

C.  7 11 17

D.  7 14 24

**Q 25** What will be the output of the following pseudocode?

```
1. Integer a = 1, b = 2
2. for ( int i = 0; i <= 6; i = i + 2 )
3.     a = a + b + i
4.     a = a + b    ↴
5.     b = a - b
6.     Print b
7. end for
```

Ops: A.  3 9 23 70

B.  3 7 10

C.  3 10 27 71

D.  3 10 27 70

**Q 15** What will be the output of the following pseudocode?

```
1. 1. int a = 3, b = 2
2. 2. if ( a + b < 7 )
3. 3.         a = a * 0 + b
4. 4. else
5. 5.         for(i = 1 to 4)
6. 6.             a = a + i
7. 7.     end for loop
8. 8. Print a, b + 1
```

**Ops:** A.  3 3

B.  None of the mentioned options

C.  2 3

D.  4 3

**Q 11** What will be the output of the following pseudocode for the input n = 6745?

1. 1. Start
2. 2. Read n
3. 3. Assign the given integer to a new variable q (i.e. q=n) and set rn=0
4. 4. r=q mod 10
5. 5. rn = rn \*10 +r;
6. 6. q=q/10
7. 7. Repeat steps 4 to 6 while q>0
8. 8. Print rn



[Note: 'mod' finds the remainder after the division of one number by another. For example, the expression "5 mod 2" would

evaluate to 1 because 5 divided by 2 leaves a quotient of 2 and a remainder of 1]

- Ops:**
- A.  3423
  - B.  7645
  - C.  4567
  - D.  5476

**Q 3** What will be the output of the following pseudocode?

```
1. 1. Declare Integer c, d, r
2. 2. Integer array[6]={23, 45, 67, 12, 13 25}
3. 3. for(c=0; c < 5; c++)
4. 4.     for(d=0; d < 5-c-1 ; d++)
5. 5.         if(array[d]>array[d+1])
6. 6.             r = array[d];
7. 7.             array[d] = array[d+1]
8. 8.             array[d+1]=r
9. 9.         end if
10. 10.    end for
11. 11. end for
12. 12. for(c =0; c<5 ; c++)
13. 13.     print array[c]
14. 14. end for
```

**Ops:** A.  45 67

B.  67 45 23 13 12

C.  12 13 23 45 67

D.  67 45 23 13

**Q 16** What will be the output of the following pseudocode?

```
1. 1. int a = 2, b = 3
2. 2. int result = 1
3. 3. while (b != 0)
4. 4.         result = result * a
5. 5.         b=b-1
6. 6. end while
7. 7. if( result >5 )
8. 8.         a = a -1
9. 9. else
10. 10.        a = a + 1
11. 11. Print result, a
```

**Ops:** A.  8 1

B.  7 3

C.  3 4

D.  6 1



**Q 25** What will be the output of the following pseudocode for input 134?

```
1. 1. int fun1(int num)
2. 2.     static int a = 0
3. 3.     if ( num > 0)
4. 4.         a=a+1
5. 5.         fun1(num/10)
6. 6.     else
7. 7.         return a
```

[Note: Static variables have a property of preserving their value even after they are out of their scope]

**Ops:** A.  2

B.  8

C.  3

D.  431

**Q 12** What will be the output of the following pseudocode?

```
1. Integer num , x, y, count
2. Set num = 85, count = 0
3. x = num << 1
4. y = x ^ num
5. y = y + 1
6. while ( ( y / 2 ) NOT EQUALS 0 )
7.     if ( y MOD 2 NOT EQUALS 0)
8.         count = count + 1
9.     else
10.        y = y / 2
11.    end if
12. end while
13. if (count)
14.     Print "0"
15.     Print y
16. else
17.     Print "1"
18.     Print x
```

**Q 3** What will be the output of the following C code?

```
1.  
2. #include <stdio.h>  
3. int main()  
4. {  
5.     int y = 5;  
6.     int z = y +(y = 10);  
7.     printf("%d\n", z);  
8. }
```

- Ops:
- A.  4
  - B.  20
  - C.  Either 12 or 20
  - D.  12

**Q 15** The following pseudocode can be used for:

- 1.
2. Let LB be the lower bound and UB be the upper bound of a linear array a.
3. 1. [Initialize counter] set k at lower bound LB.
4. 2. Repeat for k=LB to UB
5. Print a[k]
6. [End of the loop]
7. 3. Exit

- Ops:**
- A.  Inserting element in an array
  - B.  Sorting an array
  - C.  Deleting an element from an array
  - D.  Traversing of array

**Q 12** What will be the output of the following pseudocode for input 134?

```
1. 1. int fun1(int num)
2. 2.     static int a = 0
3. 3.     if ( num > 0 )
4. 4.         a=a+1
5. 5.         fun1(num/10)
6. 6.     else
7. 7.         return a
```

[Note: Static variables have a property of preserving their value even after they are out of their scope]

Ops: A.  431

B.  3

C.  8

D.  2

**Q 22** What will be the output of the following pseudocode?

```
1. Integer i, j, sum , n
2. Set sum = 0, n = 7
3. Repeat for i = 1 to n
4.     Repeat for j = 1 to i - 1
5.         sum = sum + j
6.     End loop
7. End loop
8. Print sum
```

- Ops:**
- A.  35
  - B.  84
  - C.  147
  - D.  56

**Q 2** What will be the output of the following C code?

```
1.  
2. #include <stdio.h>  
3. int main()  
4. {  
5.     int x = 4, y = 0;  
6.     int z;  
7.     z = (y++, y);  
8.     printf("%d\n", z);  
9.     return 0;  
10. }
```

- Ops:**
- A.  1
  - B.  0
  - C.  UndNdefined behavior due to order of evaluation can be different.
  - D.  Compilation error

**Q 5** Comment on the output of the following C code.

```
1.  
2. #include <stdio.h>  
3. void main()  
4. {  
5.     int k = 4;  
6.     int *const p = &k;  
7.     int r = 3;  
8.     p = &r;  
9.     printf("%d", p);  
10. }
```

- Ops:**
- A.  It will print address of r
  - B.  It will print address of k + address of r
  - C.  It will print address of k
  - D.  Compile time error

**Q 23** What will be the output of the following pseudocode for  $x = 11, y = 5$ ?

```
1. 1. fun(int x, int y )  
2. 2. if(x == 0)  
3. 3.     return y  
4. 4. else  
5. 5.     return fun(x-1 , x-y)
```

**Ops:** A.  71

B.  None of the mentioned options

C.  15

D.  17

E.  23



```
1.  
2. 1. Input a = 6, b=9  
3. 2. Integer n  
4. 3. Set res = 1  
5. 4. if (a > 10 && b< a)  
6.      Print Error Message  
7. 6. else  
8. 7.     for(n=a;  n<b ;  n=n+1)  
9. 8.     res = res * n  
10. 9.   End for loop  
11. 10. Print res
```

Note: '&&' operator returns true if and only if both expressions inside **if( )** are true.  
Example:

```
1.  
2. if(6>5 && 12<10)    →  
3.     print true  
4. else  
5.     print false
```

The output will be 'false' as one expression ( $12 < 10$ ) in **if( )** is not true.

- A.  124
- B.  42
- C.  336
- D.  256

**Q 16** What will be the output of the following pseudo code for input 7?

- 1.
2.   1. Read the value of N.
3.   2. Set  $m = 1$  ,  $T = 0$
4.   3. if  $m > N$
5.   4.       Go to line no. 9
6.   5. else
7.   6.        $T = T + m$
8.   7.        $m = m + 1$
9.   8. Go to line no. 3
10.   9. Display the value of T
11.   10. Stop

**Ops:** A.  56

B.  76

C.  28

D.  32



**Q 13** What will be the output of the following pseudocode?

- 1.
2. 1. Declare variable x, y and i
3. 2. Set x = 0 and y = 1
4. 3. for(int i=1; i<=4; i=i+1)
5. 4. print x
6. 5. x = x + y
7. 6. y = x / y
8. 7. End for loop

**Ops:** A.  0 1 2 4

B.  0 1 2 3

C.  1 0 2 4

D.  0 1 3 8

**Q 21** What will be the output of the following pseudocode?

```
1. 1. int n = 343, r, s, m
2. 2. set m = n
3. 3. while(n is not equal to 0)
4. 4.         r = n mod 10
5. 5.         s = s * 10 + r
6. 6.         n = n / 10
7. 7. end while loop
8. 8. print s
9. 9. if(n is equal to m)
10. 10.     print m + 1
11. 11. else
12. 12.     print m - 1
```

- Ops:**
- A.  343 344
  - B.  43 342
  - C.  340 342
  - D.  300 342

**Q 15** What will be the output of the following pseudocode?

```
1. 1.int p = 2, q = 6, r = 9, i
2. 2.if ( r > p + q )
3. 3.          for ( i = 1 to 3 )
4. 4.                  p = p + q
5. 5.                  q = q + 1
6. 6.          end for loop
7. 7. r = p - q
8. 8. print p, q and r
9.
```

**Ops:** A.  23 9 14

B.  23 9 9

C.  32 10 22

D.  15 8 7

**Q 5** What is the output of the following C code ?

```
1.  
2. #include <stdio.h>  
3. union Sti  
4. {  
5.     int nu;  
6.     char m;  
7. };  
8. int main()  
9. {  
10.    union Sti m;  
11.    printf("%d", sizeof(m));  
12.    return 0;  
13. }
```

- Ops:
- A.
  - B.
  - C.
  - D.

**Q 12** What will be the output of the following pseudocode for n = 2?

```
1. 1.int fun( int n )
2. 2. if( n EQUALS 4 )
3. 3.         return n
4. 4. else
5. 5.         return 2 * fun ( n + 1)
```

Ops: A.  4

B.  2

C.  16

D.  8

**Q 18** What will be the output of the following pseudocode?

- 1.
2. 1. Declare variable x, y and i
3. 2. Set x = 0 and y = 1
4. 3. for(int i=1; i<=4; i=i+1)
5. 4. print x
6. 5. x = x + y
7. 6. y = x / y
8. 7. End for loop



- Ops:**
- A.  0 1 2 4
  - B.  0 1 3 8
  - C.  1 0 2 4
  - D.  0 1 2 3

**Q 18** What will be the output of the following pseudocode?

```
1. Integer a , b
2. Set a = 10, b = 7
3. for(int i = 1; i <= 5; i++ )
4.         a = a + i + b
5.         while ( a > 6 )
6.             a = a + b
7.             b = b - 1
8.             a = a - 1
9.         end while
10.        Print a
11.    End for
```



**Ops:** A.  3 -3 -8 -12 -15

B.  -6 -13 -19 -24 -28

C.  3 -3 -8 -15

D.  3 2 1 0 -3

---

**Q 18** Consider the given pseudocode and determine the output.

1. 1. Declare an integer variable n
2. 2. Declare an integer variable value
3. 3. Declare an integer variable x1
4. 4. Declare an integer variable x2
5. 5. Set value to 0
6. 6. Set x1 to 0 and x2 to 1
7. 7. Set n to 5
8. 8. Repeat n times
9.     8.1 Print value
10.    8.2 value = x1 + x2
11.    8.3 x2 = x1
12.    8.4 x1 = value
13. 9. End loop

- 
- Ops:**
- A.  10
  - B.  0 1 1 2 3
  - C.  0 1 2 3 5
  - D.  1 2 3 5 8

**Q 17** What will be the output of the following pseudocode?

```
1. Integer a , b
2. Set a = 2, b = 50
3. while( b > 0 )
4.         a = b MOD 2 + a
5.         if ( a MOD 3 IS EQUAL TO 0 )
6.             Print (a)
7.         else
8.             Print (b - 1)
9.         b = b / 5
10.        a = a + 1
11.    end while
```

Ops: A.  50 10 2

B.  50 3 2

C.  49 3 1

D.  3 3 3

**Q 14** What will be the output of the following pseudocode?

```
1. Integer i, f, num  
2. Set f = 1, num = 8  
3. Repeat for i=1 to num  
4.         f = f * i  
5. End loop  
6. Print f
```

**Ops:** A.  0

B.  40320

C.  8

D.  1



**Q 23** What will be the output of the following pseudocode?

```
1. 1. char str[10] = "India", ch = '\n'  
2. 2. int ind[10], loop, j = 0  
3. 3. for( loop = 0; str[loop] != '\0' ; loop=loop+1)  
4. 4.     if ( str[loop] == ch )  
5. 5.         ind[j++] = loop  
6. 6. for( loop = 0; loop < j; loop=loop+1)  
7. 7.     Print ind[loop]
```

[Note:  $j++ = j+1$  and  $\backslash 0 = \text{NULL}$ ]

**Ops:** A.  4

B.  3

C.  1

D.  0

**Q 17** What will be the output of the following pseudocode if we call **fun1()** and the value of n is 5?

```
1. 1. fun(int n, int a)
2. 2.     if ( n == 0) return a
3. 3.     return fun ( n - 1, n * a)
4. 4. fun1( int n)
5. 5.     return fun( n, 1)
```

- Ops:
- A.  16
  - B.  15
  - C.  120
  - D.  24

**Q 13** Consider the main function and fun1() implementations. What will be the output of the following pseudocode?

```
1. 1. int a
2. 2. int main()
3. 3.     while(a)
4. 4.         fun1()
5. 5.     main()
6. 6.     Print flower
7. 7. int fun1()    ↴
8. 8.     Print lily
```

[Note: The value of global variable 'a' is 0]

- Ops:** A.  Infinite loop  
B.  flower  
C.  lily  
D.  flower lily

**Q 16** What will be the output of the following pseudocode?

```
1.  
2. 1. Input n = 1234  
3. 2. Integer q, r and rn  
4. 3. Set q=n and rn = 0  
5. 4. while (q > 0)  
6. 5.     r = q mod 10  
7. 6.     rn= rn + r^3  
8. 7.     q = q /10  
9. 8. End while loop  
10. 9. Print rn
```

(Note: mod finds the remainder after division of one number by another.

For example, the expression "5 mod 2" would evaluate to 1 because 5 divided by 2 leaves a quotient of 2 and a remainder of 1)

- Ops:**
- A.  100
  - B.  36
  - C.  321
  - D.  None of the mentioned options
  - E.  10

**Q 12** What will be the output of the following pseudocode?

```
1. 1. int a = 2, b = 3, c = 3, d = 4
2. 2. if(d < 5 & d > ( c = a + b ))
3. 3.     Print A
4. 4. else
5. 5.     Print B
6. 6. Print c
```

- Ops:
- A.  B 3
  - B.  A 3
  - C.  A 5
  - D.  B 5



**Q 17** What will be the output of the following pseudo code for a given array  $a[5] = 3, 4, 6, 1, 2$  and pos is 2?

[Note: n = the size of the array i.e. 5 and Starting array index is 0]

- 1.
2. 1. Declare i, j, n, pos
3. 2. Repeat for j=pos to n-1
4. Set  $a[j] = a[j+1]$  [End of loop]
5. 3.  $n=n-1;$
6. 4. Display the new array
7. 5. End

- Ops:**
- A.  3 4 2 1 2
  - B.  3 2 4 6 1 2
  - C.  3 6 1 2
  - D.  3 4 1 2

**Q 23** Consider the following pseudocode. How many multiplications will be performed here?

```
1. 1. M = 2
2. 2. for i = 1 to N do
3. 3.   for j = i to N do →
4. 4.     for k = j + 1 to N do
5. 5.       M = M * 3
6. 6.   end for
7. 7. end for
8. 8.end for
```

- Ops:**
- A.  One-sixth of the product of the 3 consecutive integers.
  - B.  Half of the product of the 3 consecutive integers.
  - C.  None of the mentioned options
  - D.  One-third of the product of the 3 consecutive integers.

**Q 5** What will be the output of the following C code?

```
1.  
2. #include <stdio.h>  
3. int main()  
4. {  
5.     int x = 0;  
6.     if (x == 1)  
7.         if (x == 0)  
8.             printf("inside if\n");  
9.         else  
10.            printf("inside else if\n");  
11.        else  
12.            printf("inside else\n");  
13. }
```

- Ops:**
- A.  Compilation error
  - B.  inside if
  - C.  inside else
  - D.  inside else if

**Q 13** What will be the output of the following pseudocode?

```
1.  
2. 1. Integer result and set num1=5, num2=7, num3=6  
3. 2. if( num1 > num2)  
4. 3.     if(num1 > num3)  
5. 4.         result = num1  
6. 5.     else  
7. 6.         result = num3  
8. 7.     else if(num2 > num3)  
9. 8.         result = num2  
10. 9.     else  
11. 10.    result = num3  
12. 11. Print result
```



- Ops:**
- A.  5
  - B.  4
  - C.  7
  - D.  Error in the logic

**Q 17** What will be the output of the following pseudocode for input a = 8 and b = 9?

```
1.  
2. 1. function(input a, input b)  
3. 2. if(a < b)  
4. 3.     return function(b,a)  
5. 4. elseif(b != 0)  
6. 5.     return(a + function(a, b-1))  
7. 6. else  
8. 7.     return 0
```

- Ops:**
- A.  65
  - B.  None of the mentioned options
  - C.  72**
  - D.  56
  - E.  88



**Q 15** What will be the output of the following pseudocode?

```
1.  
2. Input : 5  
3.  
4. Algorithm(integer num)  
5. 1 Set integer i=2  
6. 2 while i<=num/2  
7. 3     if num mod i = 0  
8. 4         print "Un-successful" and exit;  
9. 5     i=i+1  
10. 6 if (i==(num/2)+1)  
11. 7 Print "Successful"
```

- Ops:
- A.  Successful
  - B.  Un-successful
  - C.  It will not print anything
  - D.  Undefined behaviour of the algorithm

**Q 17** What will be the output of the following pseudocode?

```
1. Integer i, j, sum , n
2. Set sum = 0, n = 7
3. Repeat for i = 1 to n
4.     Repeat for j = 1 to i - 1
5.         sum = sum + j
6.     End loop
7. End loop
8. Print sum
```

**Ops:** A.  56

- B.  147
- C.  84
- D.  35

**Q 1** What will be the output of the following C code?

```
1.  
2. #include <stdio.h>  
3. int main()  
4. {  
5.     int x = 2, y = 0, z = 3;  
6.     x > y ? printf("%d", z) : return z;  
7. }
```

**Ops:** A.

- 3
- Runtime Error
- Compile time Error
- 1

**Q 17** What will be the output of the following pseudocode?

1. **1.int** m = 3, n = 2, o = 4
2. **2.while** ( n > 0 )
3. **3.** m = m \* o + n ;
4. **4.** n = n - 1
5. **5.end while loop**
6. **6.** o = o + m
7. **7.print** m, n, o



- Ops:**
- A.  3 2 4
  - B.  2 1 6
  - C.  2 3 4
  - D.  1 0 5

**Q 12** What will be the output of the following pseudocode?

```
1.  
2. 1. Input m = 9, n = 6  
3. 2. m = m + 1  
4. 3. n = n - 1  
5. 4. m = m + n  
6. 5. if(m>n)  
7. 6.     print m  
8. 7. else  
9. 8.     print n
```

Ops: A.  15

- B.  5
- C.  6
- D.  10



**Q 12** What will be the output of the following algorithm ?

- 1.
2.   1. Start
3.   2. Declare variable f, g and i
4.   3. Set f=0 and g=1
5.   4. for i=1 to 4
6.   5.       print f
7.   6.       f = f + g
8.   7.       g = f + g
9.   8. End

**Ops:** A.  0 1 3 8

B.  0 1 1 8

C.  0 2 5 8

D.  0 1 1 2

**Q 21** What will be the output of the following pseudocode for the input n = 6745?

1. 1. Start
2. 2. Read n
3. 3. Assign the given integer to a new variable q (i.e. q=n) and set rn=0
4. 4. r=q mod 10
5. 5. rn = rn \*10 +r;
6. 6. q=q/10
7. 7. Repeat steps 4 to 6 while q>0
8. 8. Print rn

[Note: 'mod' finds the remainder after the division of one number by another. For example, the expression "5 mod 2" would

evaluate to 1 because 5 divided by 2 leaves a quotient of 2 and a remainder of 1]

- Ops:
- A.  5476
  - B.  4567
  - C.  7645
  - D.  3423

**Q 14** What will be the necessary condition to get the desired element from a given array by using the following algorithm?

```
1.  
2. IF LOC = -1 do ITEM NOT FOUND  
3. Do_Something(DATA, N, ITEM,LOC)  
4. 1. Initialize counter set LOC=0, LOW=0, HI= N-1  
5. 2. [Search for item] Repeat while LOW≤ HI  
6. 2.1 MID=(LOW+HI)/2  
7. 2.2 IF ITEM= DATA[MID] do  
8. 2.3 LOC=MID  
9. 2.4 Return LOC  
10. 2.5 IF ITEM < DATA [MID]  
11. 2.5.1 HI = MID -1  
12. 2.6 ELSE  
13. 2.6.1. LOW= MID +1
```

- Ops:**
- A.  The array should contain more than one element
  - B.  The elements in an array should be in the sorted form
  - C.  No pre-condition is required for the algorithm to work
  - D.  The elements in an array should be in unsorted form

**Q 18** What will be the output of the following pseudocode?

```
1. Integer a , b
2. Set a = 125, b = 122
3. if( (a + b) MOD 2 NOT EQUALS 0 )
4.         while ( a > 0 )
5.                 b = a + b
6.                 a = a / 5
7.             End while
8.             Print b
9. else
10.         a = a - b
11.         a = a / 2
12.         Print a
13. end if
```

**Ops:** A.  234

B.  278

C.  2

D.  274

**Q 15** What will be the output of the following pseudocode?

```
1.  
2. 1. Integer result and set num1=5, num2=7, num3=6  
3. 2. if( num1 > num2)  
4. 3.     if(num1 > num3)  
5. 4.         result = num1  
6. 5.     else  
7. 6.         result = num3  
8. 7.     else if(num2 > num3)  
9. 8.         result = num2  
10. 9.     else  
11. 10.    result = num3  
12. 11. Print result
```

Ops: A.  7

B.  5

C.  Error in the logic

D.  4

**Q 19** What will be the output of the following pseudocode?

```
1. Integer a , b
2. Set a = 10, b = 7
3. for(int i = 1; i <= 5; i++ )
4.         a = a + i + b
5.         while ( a > 6 )
6.             a = a + b
7.             b = b - 1
8.             a = a - 1
9.         end while
10.        Print a
11.    End for
```

**Ops:** A.  -6 -13 -19 -24 -28

B.  3 2 1 0 -3

C.  3 -3 -8 -15

D.  3 -3 -8 -12 -15

**Q 14** What will be the output of the following pseudocode?

```
1. 1. int i, N = 5
2. 2. int sum = 0
3. 3. for( i = 1 to 5)
4. 4.         sum = sum + ( i * i )
5. 5. print sum
```

**Ops:** A.  25

B.  65

C.  55

D.  70

**Q 3** What will be the output of the following C Program?

```
1.  
2. #include <stdio.h>  
3. int main()  
4. {  
5.     int a = 0, i = 0, b;  
6.     for (i = 0;i < 5; i++)  
7.     {  
8.         a++;  
9.         if (i == 3)  
10.             printf("Hello World");  
11.         break;  
12.     }  
13.     printf("%d",a);  
14.     return 0;  
15. }
```



- Ops:
- A.  2
  - B.  Hello World
  - C.  1
  - D.  4

**Q 21** What will be the output of the following pseudocode?

```
1. Integer a = 3, b = 13, c = 14, d = 7, i, j
2. if(a+c > b+d)
3.     for(i = a to d)
4.         c = c + i + b
5.         i = i + 1
6.     end for
7.     Print c
8. else
9.     for(int j = b to c)
10.        a = a + j + d
11.        j = j + 1
12.    end for
13.    Print a
```

- Ops:**
- A.  32
  - B.  46
  - C.  23
  - D.  44

**Q 24** What will be the output of the following pseudocode for a given array  $a[5] = 3, 4, 6, 1, 2$  and  $pos = 2$ ?

[Note:  $n =$  the size of the array i.e. 5 and starting array index is 0]

1. 1. Declare  $i, j, n, pos$
2. 2. Repeat for  $j=pos$  to  $n-1$ 
  - Set  $a[j] = a[j+1]$
3. End for loop
4. 3.  $n=n-1;$
5. 4. Display the new array
6. 5. End

- Ops:**
- A.  3 4 2 1 2
  - B.  3 2 4 6 1 2
  - C.  3 4 1 2
  - D.  3 6 1 2

**Q 15** What will be the output of the following pseudocode for p = 3, q = 4?

```
1. 1.int fun1 ( int p, int q)
2. 2.if ( q EQUALS 0)      ↴
3. 3.          return 0
4. 4.if ( q mod 2 EQUALS 0)
5. 5.          return fun1 ( p + p, q / 2)
6. 6.return fun1 ( p + p, q / 2) + p
```

**Ops:** A.  None of the mentioned options

B.  12

C.  7

D.  8

**Q 14** What will be the output of the following pseudocode?

```
1.  
2. 1. Input f = 6, g = 9 and set sum = 0  
3. 2. Integer n  
4. 3. if ( g > f)  
5. 4.     for(n = f ; n < g ; n = n+1)  
6. 5.             sum = sum + n  
7. 6.     End for loop  
8. 7. else  
9. 8.     Print Error Message  
10. 9. Print sum
```

Ops: A.  9

B.  15

C.  6

D.  21

**Q 13** Consider the following pseudocode.

```
1.  
2.  a:=1;  
3.  b : =1;  
4.  while ( a ≤500)  
5.  begin  
6.    a: =2a;  
7.    b: =b+1;  
8.  end
```



What is the value of b at the end of the pseudocode?

- Ops:** A.  5  
B.  4  
C.  6  
D.  7

**Q 4** What will be the output of the following statements?

1. Declare the integer variables x, y and z
2. if x > y
3. if z > y
4. Display "One".
5. else
6. if z is equal to x
7. Display "Two".
8. else
9. Display "Three".
10. else Display "Four"

**Ops:** A.  It will display two if  $z \leq y$ .

B.  It will display two if  $x > y > z$ .

C.  It will display four if  $x \leq y$ .

D.  It will display four if  $x > y < z$ .



**Q 15** What does the run() do in general?

```
1.  
2. int fun(int x, int y)    →  
3. {  
4.     if (y == 0)    return 0;  
5.     return (x + fun(x, y-1));  
6. }  
7.  
8. int run(int a, int b)  
9. {  
10.    if (b == 0) return 1;  
11.    return fun(a, run(a, b-1));  
12. }
```

- Ops:**
- A.  Calculate  $x+x^y$
  - B.  Calculate  $x^y$
  - C.  Calculate  $x*y$
  - D.  Calculate  $y^x$

**Q 24** Consider the following fragment. Which of the following statements will be executed in this case?

1. 1. Integer x =10, y=3 and z=7
2. 2. if (x /y ≠ 0)
3. 3. if y > z s1
4. 4. else s2
5. 5. else s3



**Ops:** A.  Statement s2 will be executed

- B.  Statement s1 will be executed
- C.  Statement s3 will be executed
- D.  None of the mentioned options

**Q 23** What will be the output of the following pseudocode for  $p = 3, q = 4$ ? 

```
1. int fun1 ( int p, int q)
2. if ( q EQUALS 0)
3.     return 0
4. if ( q mod 2 EQUALS 0)
5.     return fun1 ( p + p, q / 2)
6. return fun1 ( p + p, q / 2) + p
```

- Ops:**
- A.  7
  - B.  None of the mentioned options
  - C.  12
  - D.  8

**Q 22** Consider the main function and fun1() implementations. What will be the output of the following pseudocode?

```
1. 1. int a
2. 2. int main()
3. 3.     while(a)
4. 4.         fun1()      →
5. 5.         main()
6. 6.     Print flower
7. 7. int fun1()
8. 8.     Print lily
```

[Note: The value of global variable 'a' is 0]

**Ops:** A.  flower

B.  lily

C.  Infinite loop

D.  flower lily

**Q 21** What will be the output of the following pseudocode?

```
1. Integer y , z , k , c
2. Set y = 8, z = 3, k = 1
3. if ( z + k < y )
4.     if( z MOD 2 NOT EQUALS 0 )
5.         c = y + z
6.     else
7.         c = y + k
8.     y = y + z + k + c
9. else
10.    y = y + c + k
11. end if
12. Print y
```



**Ops:** A.  21

B.  8

C.  23

D.  20

**Q 20** What will be the output of the following pseudocode for n = 2?

```
1. 1.int fun( int n )
2. 2. if( n EQUALS 4 )
3. 3.         return n
4. 4. else
5. 5.         return 2 * fun ( n + 1)
```

Ops: A.  8

B.  16

C.  4

D.  2

**Q 17** What will be the output of the following pseudocode?

```
1. Integer i = 0
2. i = i + 12 // Line 2
3. Print i
4. if ( i < 60 )
5.     Goto line number 2
6. else
7.     Print i + 1
8. end if
```

**Ops:** A.  12 24 36 48 60 61

B.  0 12 0 12 13

C.  0 12 24 25

D.  None of the mentioned options

**Q 14** What will be the output of the following pseudocode?

```
1. Integer a , b , c
2. Set a = 10, b = 20
3. for (c = a; c <= b; c = c + 2)
4.         a = a + c
5.         b = b - a + c
6.         if (a > 10)
7.             Print a
8.         else
9.             Print b
10.        end if
11.    end for
```

- Ops:**
- A.  22
  - B.  20 32
  - C.  20 23
  - D.  20

**Q 13** What will be the output of the following pseudocode?

```
1. 1. int a = 3, b = 2
2. 2. if ( a + b < 7 )
3. 3.         a = a * 0 + b
4. 4. else
5. 5.         for(i = 1 to 4)
6. 6.                 a = a + i
7. 7.     end for loop
8. 8. Print a, b + 1
```

**Ops:** A.  2 3

B.  3 3

C.  None of the mentioned options 

D.  4 3

**Q 12** What will be the output of the following pseudocode?

```
1. Integer num , x, y, count
2. Set num = 85, count = 0
3. x = num << 1
4. y = x ^ num
5. y = y + 1
6. while ( ( y / 2 ) NOT EQUALS 0 )
7.     if ( y MOD 2 NOT EQUALS 0)
8.         count = count + 1
9.     else
10.        y = y / 2
11.    end if
12. end while
13. if (count)
14.     Print "0"
15.     Print y
16. else
17.     Print "1"
18.     Print x
```

end if

Note: 1.  $\wedge$  : Bitwise XOR operator

2.  $<<$  : Left-shift operator

**Ops:** A.  1 125

B.  1 170

**Q 17** What will be the output of the following pseudocode if we call **fun1()** and the value of n is 5?

```
1. 1. fun(int n, int a)
2. 2.         if ( n == 0) return a
3. 3.         return fun ( n - 1, n * a)
4. 4. fun1( int n)
5. 5.         return fun( n, 1)
```

- Ops:
- A.  120
  - B.  24 
  - C.  16
  - D.  15

**Q 14** What will be the output of the following pseudocode?

```
1. Integer a , b
2. Set a = 2, b = 50
3. while( b > 0 )
4.         a = b MOD 2 + a
5.         if ( a MOD 3 IS EQUAL TO 0 )
6.                 Print (a)
7.         else
8.                 Print (b - 1)
9.         b = b / 5
10.        a = a + 1
11.    end while
```

Ops: A.  50 3 2

B.  3 3 3

C.  49 3 1

D.  50 10 2

**Q 12** What will be the output of the following pseudocode?

1. Integer i, j, sum, n
2. Set sum=0, n=7
3. Repeat for i = 1 to n
4.       sum = sum + ( i \* i)
5. End loop
6. Print sum

**Ops:** A.  64

B.  8

C.  49

D.  204



**Q 11** What will be the output of the following pseudocode?

1. 1. int p = 4, q = 7, r = 10
2. 2. p = q mod r
3. 3. q = q + p
4. 4. r = r + q
5. 5. Print p, q and r

**Ops:** A.  7 11 17



B.  4 11 17

C.  7 14 24

D.  7 14 21

**Q 25** What will be the output of the following pseudocode if the value of n1 and n2 are 12 and 30 respectively?

```
1. 1. Declare integer variables n1, n2, i, j and flag
2. 2. Read the values of n1 and n2
3. 3. for i = n1+1 to (n2 - 1)
4.     3.1 Set flag = 1
5.     3.2 for j=2 to i/2
6.         3.2.1 if (i mod j) = 0 then Set flag =0
7.             break
8.         End if
9.     End for
10.    3.3 if flag = 1 then Print i
11.    end if
12.    3.4 Set i=i+1
13. End for
14. 4. Stop
```



[Note: mod finds the remainder after the division of one number by another. For example, the expression "5 mod 2" would evaluate to 1 because 5 divided by 2 leaves a quotient of 2 and a remainder of 1]

- Ops:**
- A.  13 15 17 19 21 23 25 27 29
  - B.  13 17 19 23
  - C.  Will print all the values from 12 to 30
  - D.  12 15 18 21

**Q 23** What will be the output of the following pseudocode?

```
1. 1. int a = 10, b = 4, i
2. 2. if( a > b )
3. 3.     if ( a + b > 14 )
4. 4.         print a
5. 5.     else
6. 6.         for ( i = 1 to 3 )
7. 7.             a = a + i
8. 8.         end for loop
9. 9.         print a
10. 10. else
11. 11.     print b
```

**Ops:** A.  4



B.  14

C.  10

D.  16

**Q 22** What will be the output of the following pseudocode?

```
1. Integer a , b
2. Set a = 125, b = 122
3. if( (a + b) MOD 2 NOT EQUALS 0 )
4.     while ( a > 0 )
5.         b = a + b
6.         a = a / 5
7.     End while
8.     Print b
9. else
10.    a = a - b
11.    a = a / 2
12.    Print a
13. end if
```

Ops: A.  2

B.  278

C.  274

D.  234



**Q 20** What will be the output of the following pseudocode?

```
1. Integer i = 0
2. i = i + 12 // Line 2
3. Print i
4. if ( i < 60 )
5.         Goto line number 2
6. else
7.         Print i + 1
8. end if
```

- Ops:**
- A.  0 12 0 12 13
  - B.  0 12 24 25
  - C.  None of the mentioned options
  - D.  12 24 36 48 60 61

**Q 19** What will be the output of the following pseudocode?

```
1. Integer a , b , c
2. Set a = 10, b = 20
3. for (c = a; c <= b; c = c + 2)
4.         a = a + c
5.         b = b - a + c
6.         if (a > 10)
7.             Print a
8.         else
9.             Print b
10.        end if
11.    end for
```

Ops: A.  20

B.  20 23

C.  22

D.  20 32

**Q 18** What will be the output of the following pseudocode?

```
1. 1. int a = 5, b = 8, c
2. 2. if ( a > 8 OR b < 7 )
3. 3.     c = a + b
4. 4. elseif ( a + b > 9)
5. 5.     c = a - b
6. 6. else
7. 7.     a = a + 5
8. 8.     c = c - 2
9. 9. a = a + b
10. 10. Print a and c
11. 11. b = b - 5
```

[Note: OR - The logical OR operator returns the boolean value true if either or both operands are true and returns false otherwise.]

- Ops:
- A.  5 -3
  - B.  5 1
  - C.  2 0
  - D.  2 -3

**Q 17** What will be the output of the following pseudocode ?

```
1. 1.int m = 0 , n=13, flag = 0, i
2. 2. m = n/2
3. 3. for ( i = 2 to m)
4. 4.         if ( n mod i = 0)
5. 5.             flag = 1
6. 6.         go to line number 9
7. 7. end if
8. 8. end for loop
9. 9. if( flag = 0)
10. 10.     print n
11. 11. else print 1
```

**Ops:** A.  6

B.  1

C.  13

D.  0

**Q 11** What will be the output of the following pseudocode?

```
1.   1. int a = 9, b = 7, c = 8, d = 4, e
2.   2.e = a + b + c + d / 4
3.   3. if ( e > 5)
4.     4.     → print "PASS"
5.   5. else
6.     6.       print "FAIL"
```

**Ops:** A.  1

B.  0

C.  FAIL

D.  PASS

**Q 15** What will be the output of the following pseudocode?

```
1. 1. int a = 2, b = 3
2. 2. int result = 1
3. 3. while (b != 0)
4. 4.         result = result * a
5. 5.         b=b-1
6. 6. end while
7. 7. if( result >5 )
8. 8.         a = a -1
9. 9. else
10. 10.        a = a + 1
11. 11. Print result, a
```

**Ops:** A.  7 3

B.  6 1

C.  8 1

D.  3 4



**Q 23** What will be the output of the following pseudocode?

```
1. Integer a , b
2. Set a = 2, b = 50
3. while( b > 0 )
4.         a = b MOD 2 + a
5.         if ( a MOD 3 IS EQUAL TO 0 )
6.                 Print (a)
7.         else
8.                 Print (b - 1)
9.         b = b / 5
10.        a = a + 1
11.    end while
```

**Ops:** A.  49 3 1

B.  50 3 2

C.  3 3 3



D.  50 10 2

**Q 22** What will be the output of the following pseudocode?

```
1. Integer i, j, sum , n
2. Set sum = 0, n = 7
3. Repeat for i = 1 to n
4.     Repeat for j = 1 to i - 1
5.         sum = sum + j
6.     End loop
7. End loop
8. Print sum
```

- Ops:**
- A.  147
  - B.  84
  - C.  35
  - D.  56



**Q 20** What will be the output of the following pseudocode?

```
1. Integer y , z , k , c
2. Set y = 8, z = 3, k = 1
3. if ( z + k < y )
4.     if( z MOD 2 NOT EQUALS 0 )
5.         c = y + z
6.     else
7.         c = y + k
8.     y = y + z + k + c
9. else
10.    y = y + c + k
11. end if
12. Print y
```

Ops: A.  23

- B.  20
- C.  8
- D.  21

**Q 18** What will be the output of the following pseudocode for n = 2?

```
1. 1.int fun( int n )
2. 2. if( n EQUALS 4 )
3. 3.         return n
4. 4. else
5. 5.         return 2 * fun ( n + 1)
```

Ops: A.  16

B.  4

C.  2

D.  8



**Q 17** What will be the output of the following pseudocode?

```
1. 1.int m = 3, n = 2, o = 4
2. 2.while ( n > 0 )
3. 3.          m = m * o + n ;
4. 4.          n = n - 1
5. 5.end while loop
6. 6. o = o + m
7. 7.print m, n, o
```

**Ops:** A.  3 2 4

B.  2 3 4

C.  1 0 5

D.  2 1 6



**Q 15** What will be the output of the following pseudocode if we call **fun1()** and the value of n is 5?

```
1. 1. fun(int n, int a)
2. 2.         if ( n == 0) return a
3. 3.         return fun ( n - 1, n * a)
4. 4. fun1( int n)
5. 5.         return fun( n, 1)
```

- Ops:
- A.  15
  - B.  16
  - C.  120
  - D.  24

**Q 14** What will be the output of the following pseudocode if the value of n1 and n2 are 12 and 30 respectively?

```
1. 1. Declare integer variables n1, n2, i, j and flag
2. 2. Read the values of n1 and n2
3. 3. for i = n1+1 to (n2 - 1)
4.     3.1 Set flag = 1
5.     3.2 for j=2 to i/2
6.         3.2.1 if (i mod j) = 0 then Set flag =0
7.             break
8.         End if
9.     End for
10.    3.3 if flag = 1 then Print i
11.    end if
12.    3.4 Set i=i+1
13. End for
14. 4. Stop
```

[Note: mod finds the remainder after the division of one number by another. For example, the expression "5 mod 2" would evaluate to 1 because 5 divided by 2 leaves a quotient of 2 and a remainder of 1]

- Ops:
- A.  13 17 19 23
  - B.  13 15 17 19 21 23 25 27 29
  - C.  12 15 18 21
  - D.  Will print all the values from 12 to 30

**Question  
27**

Not yet answered

Marked out of 1.00

Flag question

Data structure representation in memory is termed as:

Select one:

- a. File structure
- b. Recursive data type
- c. Storage structure
- d. Abstract data type

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### Question 0

What is the output of the following pseudo code?

Integer a[5],j,m;

Set m=0;

Set a[5]={5,4,3,2,1}

for(each i from 0 to 4)

    if( i mod 2 EQUAL 0 || i mod 3 EQUAL 0)

        m=m+a[i]

    End if

End for

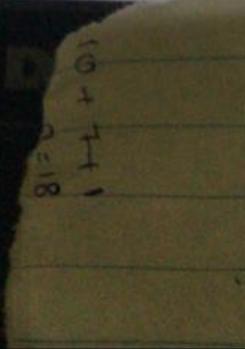
Print m

10

9

11

15



## Question 0

In Binary trees nodes with no successor are called ?

End nodes

Terminal nodes



Final nodes

Last nodes

**Submit**

Next

00 : 52 : 55

Integer a,b

Set a=10,b=7

for(int i=1;i<=5;i++)

a=a+i+b

while(a>6)

a=a+b

b=b-1

a=a-1

end while

Print a

End for

3 2 1 0 3

3 -3 -8 -15

3 -3 -8 -12 -15

-6 -13 -19 -24 -28

00 : 49 : 13

Time left: 00:51

Question 0

Which of the following sorting technique does not have time complexity  $O(n^2)$

Bubble Sort

Merge Sort

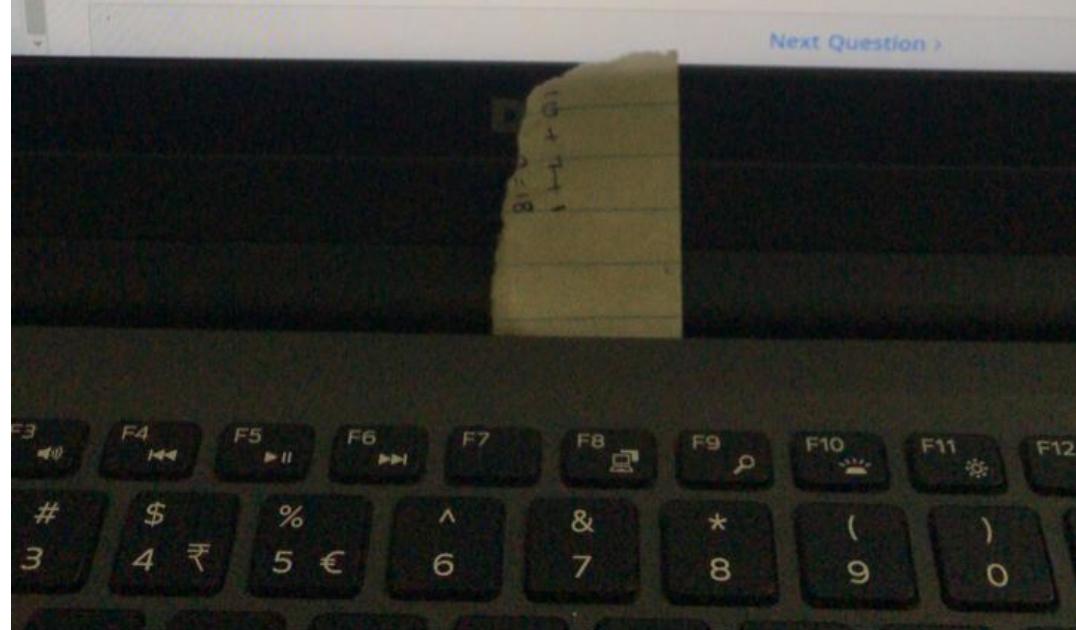
Quick Sort

Insertion Sort

**Submit**

Do not forget to submit your answer.

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## Question 28

Not yet answered

Marked out of 1.00

Flag question

What is the complexity of bellman-ford single source shortest path algorithm on a complete graph of n vertices ?

Select one:

- a.  $\Theta(n^3)$
- b.  $\Theta(n^2)$
- c.  $\Theta(n^3 \log n)$
- d.  $\Theta(n^2 \log n)$

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## Question 19

Not yet answered

Marked out of 1.00

 Flag question

..... sorting algorithm is frequently used when n is small where n is total number of elements.

Select one:

- a. Bubble sort
- b. Heap Sort
- c. Insertion sort
- d. Quick Sort

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## Question 10

Not yet answered

Marked out of 1.00

 Flag question

What will be the output of the following pseudocode?

1. Integer a, b, x, y
2. Set a = -1, b = -a //line 2
3. x = (a > 0) AND (b < 0) OR (a < 0) AND (b > 0)
4. y = (a <= 0) OR (b >= 0) AND (a >= 0) OR (b <= 0)
5. if( x IS EQUAL TO y)
6.     Print 1
7. else
8.     Print 0
9. end if

Select one:

- a. None of the above
- b. Error at Line2
- c. 1
- d. 0

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Question  
**13**

Not yet answered

Marked out of 1.00

Flag question

What will be the output of the following code?

1. char str[20]
2. Integer s
3. Set str = "ABCDEFGHIJK"
4. s = string\_length(str)
5. str[3]= NULL
6. s = strlen(str)
7. Print s

Note:string\_length() function calculate length of string

Select one:

- a. 11
- b. 3
- c. 4
- d. 2

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Type here to search



**Question  
23**

Not yet answered

Marked out of 1.00

Flag question

**Which of the following data structure will be used In case of Recursion**

Select one:

- a. Heap
- b. Stack
- c. Queue
- d. Array

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Question  
**25**

Not yet answered

Marked out of 1.00

Flag question

Consider the pseudocode mentioned below. How many print statements will be executed in the code?

1. Integer a, b, c
2. Set a = 8, b = 10, c = 6
3. if(a > c AND (b + c) > a)
4.       Print a
5. end if
6. if(c > b OR (a+c > b))
7.       Print b
8. end if
9. if((b\*c) MOD a EQUALS 0)
10.      Print c
11. end if

Select one:

- a. 0
- b. 1
- c. 2
- d. 3

[PREVIOUS PAGE](#)

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## Question 2

Not yet answered

Marked out of 1.00

 Flag question

Which of the following data structure does not keep the track of address of every element in the list?

Select one:

- a. String
- b. Linear Array
- c. Queue
- d. Stack



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**Question  
12**

Not yet answered

Marked out of 1.00

 Flag question

What will be the output of the following pseudocode?

1. Integer p, q, r
2. Set q = 20
3. for(each p from 2 to 6)
4.     q = q + p
5. end for
6. r = q / 5
7. Print c

Select one:

- a. 10
- b. None
- c. 6
- d. 8

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**Question No: 2**

What will be the output of the following pseudocode?

```
1.input a=6,b=9  
2.integer n  
3.set res =1  
4.if ( a> 10 && b< a)  
5. print error message  
6.else  
7. for( n=a; n<b; n=n+1)  
8. res =res * n  
9. end for loop  
10.print res
```

note: '&&' operator returns true if and only if the expressions inside if( ) are true.

Example:

```
1. if(6>5 && 12<10)  
2. print true  
else  
3. print false
```

The output will be 'false' as one expression (12<10) in if( ) is not true.

336

CORRECT

## Question 2

Complete

Mark 0.00 out of  
1.00

Flag question

What will be the output of the following pseudocode?

```
1. Integer n, t, d, c, r
2. Set n = 854323, d = 3, c = 0
3. Set t = n
4. While(t > 0)
5.     r = t mod 10
6.     if(r EQUALS d)
7.         c = c + 1
8.     end if
9.     t = t / 10
10. end While
11. Print c
```



Select one:

- a. 2
- b. 25
- c. 1
- d. 8

## Question 3

What will be the output of the following pseudocode?

**Question  
11**

Not answered

Marked out of 1.00

Flag question

What will be the output of the following pseudocode?

```
1. char text = "TESTSTRING"
2. Integer a,c
3. char ch = 'T'
4. c = 0
5. for(each a from 0 to length of text)
6.     if(text[a] == ch)
7.         c=c+1
8.     end if
9. end for
10. if(c>0)
11.     Print c
12. else
13.     Print "0"
14. end if
```

Select one:

- a. 6
- b. 1
- c. 10
- d. 3

**Question  
12**

How many times "A" will be printed in the following pseudocode?

```
1. Integer a, b, c
2. for(a = 0 to 1)
```

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## Question 17

Not yet answered

Marked out of 1.00

Flag question

Pick out the correct statement to be filled in 'if' loop to meet the "is empty" condition in a queue.

```
1. bool isempty() {  
2.     if( _____ )  
3.         return true;  
4.     else  
5.         return false;  
6. }
```

Select one:

- a. front > 0 && front < rear
- b. front < 0 || front > rear
- c. front < 0 && front > rear
- d. front > 0 || front < rear

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Question No: 4

Course: Ca

What will be the output of the following psuedo code?

```
Integer array[] = {0, 2, 4, 6, 7, 5, 3}
Integer n, result = 0
for (n : 0 to 7)
    if n MOD 2 EQUALS 1
        result += array[n]
    end if
end for
print result
```

14

13

15

17

CORRECT

Status: Wrong

Mark obtained: 0/1

Hints used: 0

Question type: MCQ Single Correct

Subject: MCQ

Subject: C Programming - Array

Question No: 3

What will be the output of the following psuedo code?

```
Integer array[] = {0, 2, 4, 9, 16, 5, 3}
Integer n, result = 0
for (n : 0 to 7)
    if array[n] MOD 2 EQUALS 0
        result += array[n]
    end if
end for
print result
```

14

25

22

CORRECT

17

Status: Correct

Mark obtained: 1/1

Hints used: 0

Question type: MCQ Single Correct

Subject: MCQ

Subject: C Programming - Array

**Question No: 1**

What will be the output of the following Pseudocode?

```
1. int a=10, b=4, i  
2. if (a>b)  
3. if (a+b>14)  
4. print a  
5. else  
6. for(i=1 to 3 )  
7. a = a+i  
8. end for loop  
9. print a  
10. else  
11. print b
```

4



-16

CORRECT

10

14

Status: Correct

Mark obtained: 1/1

Hints used: 0

Question No: 6

1. What will be output of the following pseudocode  
2. Integer x,y,z  
3. x=0  
4. y=1  
5. x=y=z=0  
6. print x  
7.  
8.

I

1.

0

CORRECT

none

8.

Question No: 14

What will be the output of the following psuedo code?

```
integer arr[5][5],i,j  
  
for i: 0 to 4  
  for j: 0 to 4  
    if i EQUALS 4 or i EQUALS 0  
      print arr[i][j]  
    endif  
  end for  
end for
```

print first and last row

CORRECT

print first and last column



print boundary of matrix

all elements of matrix

Status: Correct

Mark obtained: 1/1

Hints used: 0

Level: Medium

Question type: MCQ Single Correct

Subject: MCQ

Subject: C Programming - Array

**Question  
21**

Not yet answered

Marked out of 1.00

Flag question

What will be the output of the following pseudocode for the following set of inputs?

1. Integer n1, n2, n3, a
2. n1 = a MOD 10
3. n2 = a MOD 2
4. n3 = a / 100
5. if(n1 +n2>n3)  
6.     Print "Inside 1st if"
7. else if(n1+n2+n3>n3+1)  
8.     Print "Inside 2nd if"
9. else if((n1+n2)/n3 EQUALS 0)  
10.     Print "Inside 3rd if"
11. else  
12.     Print "Last if"



Inputs:

1.a=987

2.a=314

3.a=247

**Question No: 7**

What will be the output of the following psuedo code?

```
Integer arr[] = {4, 5, 6, 7}  
Integer *p = (arr + 1)  
print *p  
return 0
```

 5

CORRECT

 7 6 4

Status: Correct

Mark obtained: 1/1

Hints used: 0

Level: Medium

Subject: Array

Question type: MCQ Single Correct

Subject: MCQ

Subject: C Programming - Array

[Show solution](#)**Question No: 8**

What will be the output of the following psuedo code?

## Question 9

Not yet answered

Marked out of 1.00

Flag question

What will be the output of the following pseudocode for n = 12?

```
1. void reverse(int n)
2.     if (n greater than 5)
3.         exit
4.     Print n
5.     return reverse(n++)
6. End function reverse()
```

[Note: n++ typically means, it is increasing the value of a variable by 1]

Select one:

- a. None of the mentioned options
- b. It will print 1 infinite times
- c. 12468
- d. 12345



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## Question 15

Not yet answered

Marked out of 1.00

Flag question

What do we call the binary tree nodes with no successor?

Select one:

- a. Terminal Nodes
- b. Last Nodes
- c. Final Nodes
- d. End Nodes

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Question  
**30**

Not yet answered  
Marked out of 1.00  
Flag question

What will be the output of the following pseudocode for c = 1?

```
1. Integer fun(Integer c)
2.     Print c
3.     if(c<3)
4.         c = c + 2
5.         fun(fun c)
6.     end if
7.     return c
8. end function fun
```

Select one:

- a. 1355
- b. None of the above
- c. 1332
- d. 133

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## Question 7

Not yet answered

Marked out of 1.00

Flag question

What will be the output of the following pseudocode?

1. Integer p, q, r
2. Set p = 2, q = 7, r = -1
3. p = p + q + r - 9
4. q = p + r - 9
5. if( p > q)  
6.     Print "Good Bye"
7. else  
8.     Print "Take Care"

Select one:

- a. Good Bye
- b. Take Care
- c. None
- d. Good Bye Take care

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[Jump to...](#)

### Question 6

Not answered

Marked out of 1.00

Flag question

What will be the output of the following pseudocode?

```
1. Integer i, sum
2. Set i = 1, sum = 0
3. sum = sum + i //Line 3
4. if(sum > 500)
5.     Print i
6. else
7.     i = i + 1
8.     Go to line number 3
9. End if
```

Select one:

a. 36

b. 45

c. 32

d. 28

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## Question 18

Not yet answered

Marked out of 1.00

 Flag question

What will be the output of the following pseudocode for input n=5?

```
1. Integer fun(Integer n)
2.   if ( n IS EQUAL TO 0)
3.     return 0
4.   otherwise if( n is equal to 1)
5.     return 1
6.   otherwise
7.     return (n * n + fun(n-2))
8. End Function fun()
```

Select one:

a. 25

b. 40

c. 35

d. 45

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Question No: 5

What will be the output of the following psuedo code?

```
Integer i  
const Character *arr[] = {"C", "C++", "Java", "VBA"}  
const Character *(*ptr)[4] = &arr  
print ++(*ptr)[2]
```

java

c++

ava

CORRECT

sql

Status: Wrong

Mark obtained: 0/1

Hints used: 0

Question type: MCQ Single Correct

Subject: MCQ

Subject: C Programming - Array

Show solution

Question No: 6

Question No: 19

```
1 If f(a,b) is called, what is returned?  
2 function g(int n)  
3 {  
4     if (n > 0) return 1  
5     else return -1  
6 }  
7 function f(int a, int b)  
8 {  
9     if (a > b)  
10    return g(b-a)  
11    if (a < b)  
12    return g(-a+b)  
13    return 0  
14 }  
15
```

1 if a>b,-1 if a<b, 0 otherwise

0 if a equals b,-1 otherwise

-1 if a>b,1 if a<b,0 otherwise

CORRECT

Always+1

Status: Correct

Mark obtained: 1/1

Hints used: 0

Level: N

## Question 1

Not yet answered

Marked out of 1.00

Flag question

What will be the output of the following pseudocode?

```
Integer a,b  
set a=2,b=50  
while(b>0)  
    a=b mod 2+a  
    If(a mod 3 is equal to 0)  
        print a  
    else  
        print b-1  
    b=b/5  
    a=a+1  
end while
```

Select one:

- a. 4931
- b. 333
- c. 5032
- d. 50102

Question No: 2

What will be the output of the following psuedo code?

```
Integer array[] = {10, 20, 30}  
print -2[array]  
return 0
```

garbage value

-12

30

CORRECT

-15

Status: Correct

Question type: MCQ Single Correct

Mark obtained: 1/1

Subject: MCQ

Hints used: 0

Subject: C Programming - Array

Level:

Subje

Show solution

Question No: 3

What will be the output of the following psuedo code?

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## Question 16

Not yet answered

Marked out of 1.00

 Flag question

What will be the output of the following pseudocode if we call fun1() and the value of n is 5?

**Integer fun(int n,int a)**

**If(n==0) return a**

**return fun(n-1,n\*a)**

**Integer fun1(int n)**

**return fun(n,1)**

Select one:

a. 24

b. 15

c. 120

d. 16

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## Question No: 19

What will be the output of the following psuedo code?

```
Integer arr[] = {4, 5, 6, 7}  
Integer *p = (arr + 1)  
print *arr + 9
```

12

13

CORRECT

90

5

Status: Correct

Mark obtained: 1/1

Hints used: 0

Question type: MCQ Single Correct

Subject: MCQ

Subject: C Programming - Array

Show solution

## Question No: 20

What will be the output of the following psuedo code?

Question No: 12

What will be the output of the following psuedo code?

```
Integer arr[5][5] i,j  
  
for i: 0 to 4  
  for j: 0 to 4  
    if i EQUALS 4 or i EQUALS 0 or j EQUALS 0 or j EQUALS 4  
      print arr[i][j]  
    endif  
  end for  
end for
```

all elements of matrix

print boundary of matrix

print first and last row

print first row , last row and last row, lastcolumn

CORRECT

Status: Wrong

Mark obtained: 0/1

Hint used: 0

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## Question 3

Not yet answered

Marked out of 1.00

Flag question

Suppose a stack implementation supports an instruction REVERSE, which reverses the order of elements on the stack, in addition to the PUSH and POP instructions. Which of the following statements is TRUE with respect to this modified stack?

Select one:

- a. A queue can be implemented where ENQUEUE takes a sequence of three instructions and DEQUEUE takes a single instruction
- b. A queue can be implemented where both ENQUEUE and DEQUEUE take a single instruction each
- c. A queue cannot be implemented using this stack
- d. A queue can be implemented where ENQUEUE takes a single instruction and DEQUEUE takes a sequence of two instructions

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**Question No: 20**

What will be the output of the following psuedo code?

```
Integer arr[5][5],i,j  
  
for i: 0 to 4  
  for j: 0 ot 4  
    if i+j EQUALS 4  
      print arr[i][j]  
    endif  
    j=j+1  
  end for  
  i=i+1  
end for
```

print right diagonal

CORRECT



Transpose of a matrix

print left diagonal

print both diagonal

Time used: 0

Level:

Question No. 22

GMR Test 07

Course C prog

What will be the output of the following psuedo code?

```
Integer a = 5, b = 10, c = 15;  
print(a+b)  
print(c<<3)
```

10 20

15 120

CORRECT

15 30

some random number

Status: Correct

Mark obtained: 1/1

Hints used: 0

Question type: MCQ Single Correct

Subject: MCQ

Subject: C Programming - Array

Show solution

Question No. 23

What will be the output of the following psuedo code?

Question  
**26**

Not yet answered

Marked out of 1.00

P Flag question

How many times will "A" be printed by the given pseudocode?

```
1. Integer i, j, k
2. for(each i = 0 to 4)
3.   for(each j = 0 to 2)
4.     for(each k = 0 to j - 1)
5.       Print A
6.     end for
7.   end for
8. end for
```

Select one:

- a. 18
- b. 15
- c. 16
- d. 12

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## Question 29

Not yet answered

Marked out of 1.00

 Flag question

What will be the output of the following pseudocode?

```
Int p=4,q=7,r=10
p= q mod r
q= q + p
r= r + q
print p,q,r
```

Select one:

a. 7 14 21

b. 4 11 17

c. 7 14 24

d. 7 11 17

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```
8. res =res * n  
9. end for loop  
10.print res
```

note:'&&' operator returns true if and only if the expressions inside if( ) are true.

Example:

1. if(6>5 && 12<10)
2. print true
- else
3. print false

The output will be 'false' as one expression (12<10) in if() is not true.

336

CORRECT

256



124

42

Status: Correct

Question type: MCQ Single Correct

Mark obtained: 1 / 1

Subject: Programming

Hints used: 0

Subject: C Programming

Level:

Subject:

Question No: 16

What will be the output of the following pseudo code?

```
Integer main()
const Integer ary[4] = 1, 2, 3, 4
Integer *p
p = ary + 3
*p = 5
print("%d\n", ary[3])
```

5

CORRECT

4

9

3



Status: Correct

Mark obtained: 1/1

Hints used: 0

Level: Med

Question type: MCQ Single Correct

Subject: MCQ

Subject: C Programming

Subject: Co

Show solution

Question No: 17

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## Question 20

Not yet answered

Marked out of 1.00

Flag question

What will be the output of the following pseudocode?

1. Declare x, y, i
2. Set x=2, y=4
3. for i = 6 to x+1
4.     y = y + i
5.     Print y
6.     i = i - 1
7. End for

Select one:

- a. 10 15 22 23
- b. 10 15 19 22
- c. 9 14 18 19
- d. 12 17 21 22

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Question No: 17

What will be the output of the following psuedo code?

```
Integer arr[5][5],i,j
```

```
for i: 0 to 4
    for j: 0 ot 4
        if i EQUALS j
            print arr[i][j]
        endif
        if i+j EQUALS 4
            print arr[i][j]
        endif
    end for
end for
```

print transpose of matrix



print left diagonal

print left diagonal

print both diagonal with alternate elements

CORRECT

Question No: 13

What will be the output of the following psuedo code?

```
Integer arr[5][5] j  
  
for i = 0 to 4  
    for j = 0 to 4  
        if i EQUALS j  
            print arr[i][j]  
        endif  
    end for  
end for
```

print left diagonal

CORRECT

print both diagonal



print right diagonal

transpose of a matrix

Status: Wrong

Mark obtained: 0/1

Hints used: 0

Question type: MCQ Single Correct

Subject: MCQ

Subject: C Programming : Array

Level: M

Subject:

**Question No: 11**

What will be the output of the following psuedo code?

```
Integer array[] = {0, 2, 4, 6, 7, 5, 3}
Integer n, result = 0
for (n : 0 to 6)
    if n MOD 2 EQUALS 0
        result += array[n]
    end if
    n=n+1
end for
print result
```

15

16

14

17

CORRECT

Question No: 9

What will be the output of the following psuedo code?

```
Integer arr[] = {4, 5, 6, 7}  
integer *p = (arr + 1)  
print arr  
return 0
```

 7 address of arr

CORRECT

 4 5

Status: Correct

Mark obtained: 1/1

Hints used: 0

Level: M

Question type: MCQ Single Correct

Subject: MCQ

Subject: C Programming - Array

Subject:

[Show solution](#)

Question No: 10

What will be the output of the following psuedo code?

Question No: 12

```
1 If t(a,b) is called, what is returned?  
2  
3 function g(int n)  
4 {  
5 if (n > 0)  
6 return 1  
7 else  
8 return -1  
9 }  
10 function f(int a, int b)  
11 {  
12 if(a>b)  
13 return g(a-b)  
14 if(a<b)  
15 return g(b-a)  
16 return 0  
17 }
```

1 if a>b,-1 if a<b,0 otherwise

Always +1

0 if a equals b,+1 otherwise

CORRECT

-1 if a>b,1 if a<b 0 otherwise

Status: Correct

Mark obtained: 1/1

Hints used: 0

Level

Question No: 25

What will be the output of the following psuedo code?

```
Integer array1[] = {1200, 200, 2300, 1230, 1543}
Integer array2[] = {12, 14, 16, 18, 20}
Integer temp, result = 0

for (temp 0 to 4)
    result += array1[temp]
end for
for (temp 0 to 4)
    result += array2[temp]
end for
print result
```

6533

CORRECT

6522

12200

6553

**Question No: 10**

What will be the output of the following psuedo code?

```
Integer arr[3]={6,9,12}
Integer x,y
if(a[0] mod 2 equals 0)
x=a[1]<<1
y=a[2]>>1
end if
print x,y
```

 16.12 18.6

CORRECT

 12.6 9.6

Status: Correct

Mark obtained: 1/1

Hints used: 0

Question type: MCQ Single Correct

Subject: MCQ

Subject: C Programming - Array

Level: Medium

Subject: Arrays

**Question No: 11**

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## Question 22

Not yet answered

Marked out of 1.00

Flag question

What will be the output of the following pseudocode?

```
1. Declare arr[5]
2. Set arr[]={4, 5, 7, 2, 6}
3. for i = 0 to 5
4.   for j = 0 to 4
5.     Declare t
6.     If(arr[j]>arr[j+1])
7.       t = arr[j]
8.       arr[j] = arr[j+1]
9.       arr[j+1] = t
10.    End if
11.   End for
12. End for
13. For k=0 to 5
14.   Print arr[k]
15. End for
```

Select one:

a.24567

b.76542

c.54627

d.54762

[PREVIOUS PAGE](#)

**Question No: 24**

What will be the output of the following Pseudocode?

1. Declare variable x, y and i
2. set x=0 and y=1
3. for (int i=1;i<=4;j=i+1)
4. print x
5. x=x+y
6. y=x/y
7. end for loop



0 1 2 5

0 1 2 4

CORRECT

0 1 2 3

0 1 1 4

Status: Correct

Question type: MCQ Single Correct

Mark obtained: 1/1

Subject: Programming

Hints used: 0

Subject: C Programming

Lev

Sub

Question No: 1

What will be the output of the following psuedo code?

```
integer array[] = {0, 2, 4, 6, 7, 5, 3}
integer n, result = 0
for (n : 0 to 6)
    result += array[n]
    n=n+1
end for
print result
```

25

27

CORRECT

21



26

Status: Correct

Question type: MCQ Single Correct

Show solution

Mark obtained: 1/1

Subject: MCQ

Hints used: 0

Subject: C Programming - Array

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## Question 11

Not yet answered

Marked out of 1.00

 Flag question

Which of the following statements is/are TRUE for undirected graphs?

P: Number of odd degree vertices is even.

Q: Sum of degrees of all vertices is even.

Select one:

- a. Both P and Q
- b. P only
- c. Q only
- d. Neither P Nor Q

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## Question 14

Not yet answered

Marked out of 1.00

 Flag question

Periodic collection of all the free memory space s form contiguous block of free space by an operating system is called:

Select one:

- a. Garbage collection
- b. Concatenation
- c. collision
- d. Dynamic memory allocation

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Question No: 5

Predict the output of the following pseudocode?

```
integer a = 2, b = 50;  
a=a+b;  
b=a-b;  
print a;  
print b;
```

52.48

2.52

52.2

CORRECT

2.50

Status: Correct

Question type: MCQ Single Correct

Mark obtained: 1/1

Subject: Programming

Hints used: 0

Subject: C Programming

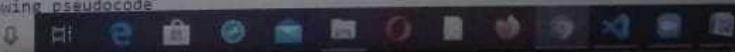
Level: Easy

Subject: Operators

Question No: 6

1. What will be output of the following pseudocode?

Type here to search



Question No: 7

```
1 What does this code do?  
2  
3 Start  
4 Read n  
5 for(each k from 1 to n)  
6 r=k mod 7  
7 if(r not equals 0)  
8 print k  
9 end if  
10 end for  
11 Stop  
12
```



print all the divided by 7 from 1 to n

none

To print all integers from 1 to n omitting those values which are divided by 7 CORRECT

print all the multiples of 7 from 1 to n

Question  
**24**

Not yet answered

Marked out of 1.00

 Flag question

What will be the output of the following pseudocode?

```
1. Integer a, b, v, c
2. Set a = 7, b = 17, v = 70
3. while(v > 5)
4.     a = a - v
5.     c = (a + b) mod 10
6.     while(c > 7)
7.         b = b + c
8.     end while
9.     v = v / 2
10. end while
11. Print b, c
```

Select one:

a. 14 -2

b. 1682

c. 12 1

d. 12 -1

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### Question 5

Not answered

Marked out of 1.00

Flag question

What will be the output of the following code?

1. Integer a, b, c, d
2. Set a=8, b=7, c=4, d=6
3. a = b + c - d
4. b = a + d - c
5. d = a + b + d
- 6.
7. Print d

Select one:

- a. 18
- b. 3
- c. 8
- d. 12

### Question 6

What will be the output of the following pseudocode?

Question No: 18

What will be the output of the following psuedo code?

```
Integer array[] = {0, 2, 4, 9, 16, 5, 3}
Integer n, result = 0
for (n : 0 to 7)
    if array[n] MOD 2 EQUALS 1
        result += array[n]
    end if
end for
print result
```

14

22

25

17

CORRECT

Status: Correct

Mark obtained: 1/1

Hints used: 0

Question type: MCQ Single Correct

Subject: MCQ

Subject: C Programming - Array

Show solution

**Question 7**

Not answered

Marked out of 1.00

Flag question

When all the data that is to be sorted can be fitted at a time in the main memory, it is called:

Select one:

- a. Radix sort
- b. Stable sort
- c. External sort
- d. Internal sort

**Question 8**

Not answered

Marked out of 1.00

Flag question

What will be the output of the following pseudocode?

```
1. Integer a = 2, b = 6, c, i
2. c = (a + b) - 3
3. for(each i from 0 to c - 1)
4.     a = a - i
5.     c = c + a
6. end for
7. Print c
```

Select one:

- a. 0
- b. 2
- c. 3
- d. 0

Question No: 13

```
3 function g(integer n)
4 {
5   if (n greater than 0)
6     return 1
7   else
8     return -1
9 }
10 function f(int a, int b)
11 {
12   if (a>b)
13     return g(a-b)
14   if(a<b)
15     return g(-b+a)
16   return 0
17 }
18
```

Always+1

1 if a>b,-1 if a<b,0 otherwise

CORRECT

0 if a equals b,-1 otherwise

-1 if a>b,1 if a<b,0 otherwise

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## Question 4

Not yet answered

Marked out of 1.00

Flag question

A machine took 200 sec to sort 200 names, using bubble sort. In 800 sec It can approximately sort?

Select one:

- a. 800 names
- b. 750 names
- c. 400 names
- d. 850 names

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**Question 9**

Not answered

Marked out of 1.00

Flag question

**For which of the following purposes, the given pseudocode can be used?**

1. Start
2. Read n
3. for k = 1 to n
4.     r = k mod 7
5.     if r not equal to 0
6.         print k
7. Stop

Select one:

- a. To print all integers from 1 to n omitting those integers which are divisible by 7.
- b. To print the maximum number from 1 to n which is not divisible by 7.
- c. To print all the integer from 1 to n those are divisible by 7.
- d. None of the mentioned options

**Question 10**

Not answered

Marked out of 1.00

Flag question

**Which of the following data structure will be used in case of Recursion**

Select one:

- a. Heap
- b. Array
- c. Queue
- d. Stack

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## Question 6

Not yet answered

Marked out of 1.00

Flag question

How many leaf nodes are present in a binary tree having a depth H?

Select one:

- a.  $2^{H+1} - 1$
- b.  $2^H + 1$
- c.  $2^H$
- d.  $2^{H-1} - 1$

[Clear my choice](#)

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**16**

Not answered

Marked out of 1.00

Flag question

```
1. Integer n1, n2, n3, a
2. n1 = a MOD 10
3. n2 = a MOD 2
4. n3 = a / 100
5. if(n1 +n2>n3)
6.     Print "Inside 1st if"
7. else if(n1+n2+n3>n3+3)
8.     Print "Inside 2nd if"
9. else if((n1+n2)/n3 EQUALS 0)
10.    Print "Inside 3rd if"
11. else
12.     Print "Last if"
```



Inputs:

1.a=987

2.a=314

3.a=247

Select one:

a. 1 - Inside 1st if

b. 2 - Inside 2nd if

c. 3 - Inside 3rd if

a. 1 - Inside 2nd if

b. 2 - Inside 3rd if

c. 3 - Last if

a. 1 - Last if

b. 2 - Inside 2nd if

c. 3 - Inside 1st if

**Question  
17**

Not answered  
Marked out of 1.00  
Flag question

A binary tree in which all its levels except possibly the last, have the maximum number of nodes and all the nodes at the last level appear as far left as possible, is known as:

Select one:

- a. Full-binary Tree
- b. Threaded Binary Tree
- c. AVL Tree
- d. Complete Binary Tree

**Question  
18**

Not answered  
Marked out of 1.00  
Flag question

What will be the output of the following pseudocode for  $c = 1$ ?

```
1. Integer fun(Integer c)
2.     Print c
3.     if(c<3)
4.         c = c + 2
5.         fun(fun c)
6.     end if
7.     return c
8. end function fun
```

Select one:

- a. 1233
- b. 135
- c. None of the above
- d. 135C

### Question 3

Not answered

Marked out of 1.00

Flag question

What will be the output of the following pseudocode

```
Integer a, b, count, count1
Set a=1, b=1
While(a<=5)
    b=1
    while (b<=5)
        b=b+1;
        count1=count1+1
    end while
    a=a+1
    count=count+1
End while
Print count, count1
```



Select one:

- a. 5 5
- b. 20 4
- c. 25 5
- d. 5 25

Question No: 8

What will be the output of the following pseudocode?

```
1.input n =1234
2.integer q, r and m
3.set q = n and m = 0
4.while(q>0)
5.    r = q mod 10
6.    m = m + r ^ 3
7.    q = q / 10
8.end while loop
9.print m
```

[Note: mod finds the remainder after division of one number by another. For example , the expression "5 mod 2" would evaluate to 1 because 5 divided by 2 leaves a quotient of 2 with a remainder of 1.]

10



36

CORRECT

 100

None of the mentioned options

321

Last Attempted: 1/1

Hints used: 0

Level: Hard

Question No: 11

What will be the output of the following Pseudocode?

1. int c = 0, d = 0
2. while ( d < 6 )
3.   d=d+2
4.   c=c+1
5. end while loop
6. print c

3

CORRECT

4

5

6

Status: Correct

Question type: MCQ Single Correct

Mark obtained: 1/1

Subject: Programming

Hints used: 0

Subject: C Programming

Level: N

Subject:

Question No: 12

Question No: 10

What will be the output of the following pseudocode?

```
input : 5
algorithm ( integer num)
1. set integer i =2
2. while i <=num/2
3. if num mod i =0
4. print "unsuccessful" and exit;
5. i = i+1
6. if (i == (num/2)+1)
7. print "successful"
```

unsuccessful

It will not print anything

successful

CORRECT

undefined behaviour of the algorithm

Status: Correct

Question type: MCQ Single Correct

Mark obtained: 1/1

Subject: Programming

Hints used: 0

Subject: C Programming

Level: Me

Subject: B

**Question No: 3**

What will be the output of the following pseudocode?

1. input f=6, g=9 and set sum=0
2. integer n
3. if ( g>f )
4. for (n=f ; n<g ; n=n+1)
5. sum = sum+n
6. end for loop
7. else
8. print error message
9. print sum

9

 21

CORRECT

6

15

Status: Correct

Question type: MCQ Single Correct

Mark obtained: 1/1

Subject: Programming

Hints used: 0

Subject: C Programming

Level: Med

Subject: In

Question No: 21

What will be the output of the following psuedo code?

```
Character str[5] = "ABC"  
print str[2]  
print str
```

AC

null ABC

CORRECT

ABCD

AB

Status: Correct

Mark obtained: 1/1

Hints used: 0

Level

Question type: MCQ Single Correct

Subject: MCQ

Subject: C Programming - Array

Subje

Show solution

Question No: 22

What will be the output of the following psuedo code?

Question No: 23

Course: Cpp

What will be the output of the following psuedo code?

```
Integer a = 5, b = 10, c = 15  
Integer x=a+b  
Integer y=x<<1  
Integer z=y+c  
print(z)
```

10

garbage value

45

CORRECT

18



Status: Correct

Question type: MCQ Single Correct

Mark obtained: 1/1

Subject: MCQ

Hints used: 0

Subject: C Programming - Array

Show solution

Question No: 24

**Question No: 22**

Consider the given pseudocode and determine the output of the code?

1. declare an integer variable n
2. declare an integer variable value
3. declare an integer variable x1
4. declare an integer variable x2
5. set value to 0
6. set x1 to 0 and x2 to 1
7. set n to 5
8. repeat n times
  - 8.1 print value
  - 8.2 value = x1 +x2
  - 8.3 x2 = x1
  - 8.4 x1 = value
9. end loop

1 2 3 5 8

0 1 2 3 4 5

10

 0 1 1 2 3

CORRECT

## Question No: 9

What will be the output of the following code for a=12 and b= -26 ?

- 1.start
- 2.take 2 variables a and b
- 3.check if a is less than 0 set a = -a
- 4.check if b is less than 0 set b = -b
- 5.repeat while a is not equal to b
- 5.1.if a > b set a = a-b
- 5.2 else set b = b - a
- 6.print a
- 7.stop

2

CORRECT



12

4

8

Status: Correct

Question type: MCQ Single Correct

Mark obtained: 1/1

Subject: Programming

Hints used: 0

Subject: C Programming

Level: Medium

Subject: Open

Question No: 8

Course: Capgemini IT

What will be the output of the following psuedo code?

```
Character *ptr  
Character Str[] = "abcdefg"  
ptr = Str  
ptr += 5  
print ptr
```

fg

CORRECT

abcd

defg

cdef

Status: Correct

Question type: MCQ Single Correct

Mark obtained: 1/1

Subject: MCQ

Hints used: 0

Subject: C Programming - Array

Level: M

Subject:

Show solution

Question No: 9

Question No: 24

What will be the output of the following psuedo code?

```
Integer arr[5][5],i,j  
  
for i: 0 to 4  
  for j: 0 ot 4  
    if i EQUALS 4 or i EQUALS 0 or j EQUALS 0 or j EQUALS 4  
      print arr[i][j]  
    endif  
  end for  
end for
```

print boundary of matrix

all elements of matrix



print first and last column

CORRECT

print first and last row

Status: Wrong

Mark obtained: 0/1

Hints used: 0

Level:

Question type: MCQ Single Correct

Subject: MCQ

Subject: C Programming - Array

Subje

Question No: 15

What is the output of following program x=30?

```
void fun(Integer x)
Integer y = 20
print( y )
return 0
```

17

20

CORRECT

30

15



Status: Correct

Mark obtained: 1/1

Hints used: 0

Question type: MCQ Single Correct

Subject: MCQ

Subject: C Programming

Show solution

Question No: 16

**Question No: 6**

What will be the output of the following ?

```
integer a[4]={3,2,6,9}
sum=0
for(i:0 to 4)
sum=sum+a[i]
i:=i+1
end for
if(sum mod 2 equals 1)
print sum-1
otherwise
print sum
```

11

19

21

20

**CORRECT**

Status: Correct

Mark obtained: 1/1

Hints used: 0

Level: Medium

Question type: MCQ Single Correct

Subject: MCQ

Subject: C Programming

Subject: Data

Show solution

Question No: 18

```
1 What will be the output if limit = 6?  
2  
3 Read limit  
4 n1 = 0, n2= 1, n3=1, count = 1;  
5 while count<= limit  
6 count=count+1  
7 n3 = n1 + n2  
8 print n3  
9 n1 = n2  
10 n2 = n3  
11 End While  
12
```

12358132

123581321

1235813

CORRECT

12358

Status: Correct

Mark obtained: 1/1

Hints used: 0

Level: M

Question No: 20

What will be the output of the following Pseudocode?

```
1. int a=9, b=7, c=8, d=4, e  
2. e = a + b + c + d / 4  
3. if (e >5)  
4. print "PASS"  
5. else  
6. print "FAIL"
```

FAIL

PASS

CORRECT

1

0

Status: Correct

Question type: MCQ Single Correct

Mark obtained: 1/1

Subject: Programming

Hints used: 0

Subject: C Programming

Level: Med

Subject: Op

First 1 2 Last

Question No: 17

```
1 For the following pseudocode a=10.  
2  
3 integer fun(integer a)  
4 if(a equals 0)  
5 return 0  
6 otherwise if(a equals 1)  
7 return 1  
8 otherwise  
9 return (a*(a-1)+fun(a-3))  
10 End function fun()  
11  
12
```

none

121

CORRECT

145

140

Status: Wrong

Mark obtained: 0/1

Hints used: 0

Level: Ea

Question No: 14

What will be the output of the following algorithm?

1. start
2. declare a, i and b
3. for i = 0 to 4
4. increment a by 1
5. if i=3 then
6. print hello
7. get out of the loop
8. end if
9. end for
10. print a

1

hello

hello4

CORRECT

4

Status: Correct

Question type: MCQ Single Correct

Mark obtained: 1/1

Subject: Programming

Hints used: 0

Subject: C Programming

Level: E

Subject:

## Question No: 16

```
1 How many times A will be printed for the following pseudocode
2 Integer q
3 Set q=0
4 for(q from 0 to 8)
5   q=q+1
6   if(q equals 6)
7     print "successful"
8     jump out of the loop
9   end if
10  end for
11  print q
12
```

 10

CORRECT

 successful

0 2 4 successful

6

Status: Wrong

Mark obtained: 0/1

Hints used: 0

Level: Medium

Reason: Your answer is correct.

Subject: Programming

Subject: C Programming

Subject: Python

**Question No: 15**

What will be the output of the following Pseudocode?

```
1.input m=9,n=6  
2.m=m+1  
3.n=n-1  
4.m=m+n  
5.if(m>n)  
6.print m  
7.else  
8.print n
```

6

15

CORRECT

5

10

Status: Correct

Question type: MCQ Single Correct

Mark obtained: 1/1

Subject: Programming

Hints used: 0

Subject: C Programming

Level: Easy

Subject: Open

## Question No: 25

What will be the output of the following pseudocode for p=3,q=4?

```
1.int fun1(int p,int q)
2.if ( q EQUALS 0)
3. return 0
4.if (q mod 2 EQUALS 0)
5. return fun1( p+p, q/2)
6.return fun1(p+p, q/2)+p
```



4

12

CORRECT

7

8

Status: Correct

Question type: MCQ Single Correct

Mark obtained: 1/1

Subject: Programming

Hints used: 0

Subject: C Programming

#### Question 4

Not answered.

Marked out of 1.00

Flag question

What will be the output of the following pseudocode?

1. Declare x, y, i
2. Set x=2, y=4
3. for i = 6 to x+1
4.     y = y \* i
5.     Print y
6.     i = i - 1
7. End for

Select one:

a. 9 14 18 19

b. 10 15 22 23

c. 12 17 21 22

d. 10 15 19 22

#### Question 5

What will be the output of the following code?

Not answered

### Question 1

Complete

Mark 0.00 out of  
1.00

Flag question

What will be the output of the following pseudocode?

```
1. Integer x
2. Set x = 259
3. if(x EQUALS 0)
4.     Print "0"
5. otherwise if(x MOD 9 EQUALS 0)
6.     Print "9"
7. otherwise
8.     Print x MOD 9
9. end if
```

Select one:

- a. 16
- b. 7
- c. 8
- d. None

### Question 2

What will be the output of the following pseudocode?

## Question 2

Complete

Mark 0.00 out of  
1.00

Flag question

What will be the output of the following pseudocode?

```
1. Integer n, t, d, c, r
2. Set n = 854323, d = 3, c = 0
3. Set t = n
4. While(t > 0)
5.     r = t mod 10
6.     if(r EQUALS d)
7.         c = c + 1
8.     end if
9.     t = t / 10
10. end While
11. Print c
```

Select one:

- a. 2
- b. 25
- c. 1

## Question 12

Not answered

Marked out of 1.00

Flag question

How many times "A" will be printed in the following pseudocode?

```
1. Integer a, b, c
2. for(a = 0 to 4)
3.   for(b = 0 to 2)
4.     if (a is greater than b)
5.       Print A
6.     End If
7.   End For
8. End For
```

Select one:

- a. 8
- b. 9
- c. 7
- d. 10

## Question 13

Not answered

Marked out of 1.00

Flag question

What will be the output of the following pseudocode for a = 10, b = 6?

```
1. Integer func (Integer a, Integer b)
2.   Integer temp
3.   while(b)
4.     temp = a MOD b
5.     a = b
6.     b = temp
7.   end while
8.   return a
9. }
10.
11. [Note: while(b) means the loop will execute until the b is no
```

Select one:

- a. 4
- b. 3
- c. 1
- d. 2

Question No: 23

```
2
3 function g(int n)
4 {
5     if(n>0)
6         return 1
7     else
8         return -1
9 }
10 function f(int a, int b)
11 {
12     if (a>b)           I
13         return g(b-a)
14
15     if(a<b)
16         return g(a-b)
17     return 0
```

1 if a>b,-1 if a<b,0 otherwise

Always -1

-1 if a>b,1 if a<b,0 otherwise

0 if a equals b, 1 otherwise

CORRECT

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## Question 5

Not yet answered

Marked out of 1.00

Flag question

Which of the following formula will correctly calculate the memory address of the third element of an array?  
(w is the number of words per memory cell for the array)

Select one:

- a. LOC(Array[3])=Base(Array[3])+(3-lower bound)
- b. LOC(Array[3])=Base(Array[4])+(3-Upper bound)
- c. LOC(Array[3])=Base(Array)+w(3-lower bound)
- d. Information is not adequate to solve the given problem

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### Question 14

Not answered

Marked out of 1.00

Flag question

Consider the pseudocode mentioned below. How many print statements will be executed in the code?

1. Integer a, b, c
2. Set a = 8, b = 10, c = 6
3. if(a > c AND (b + c) > a)
  - 4.     Print a
5. end if
6. if(c > b OR (a+c > b))
  - 7.     Print b
8. end if
9. if((b+c) MOD a EQUALS 0)
  - 10.     Print c
11. end if\*

Select one:

- a. 3
- b. 0
- c. 1
- d. 2

### Question 15

Not answered

Marked out of 1.00

Flag question

For which of the following purposes, the given pseudocode can be used?

1. Start
2. Read n
3. For k = 1 to n
  - 4.     r = k mod 7
  - 5.     if r is equal to 0
    - 6.         print k
7. Stop

Select one:

- a. None of the mentioned options.
- b. To print all the integer from 1 to n those are divisible by 7
- c. To print the maximum integer from 1 to n that is divisible by 7
- d. To print all integers from 1 to n skipping those integers which are divisible by 7

## Question 8

Not yet answered

Marked out of 1.00

Flag question

What will be the output of the following pseudocode?

```
1. Integer n, j, k, c, t, b, array[5]
2. set n = 7, c = 1
3. Set array[5] = {1, 6, 7, 11, 13}
4. b = array[0]
5. for(each k from 1 to n - 1)
6.     b = b ^ array[k]
7. end for
8. for(each k from 2 to n - 1)
9.     c = c ^ b
10. end for
11. c = c ^ k
12. Print c
```



[Note: ^ is the bitwise exclusive OR operator that compares each bit of its first operand to the corresponding bit of its second operand. If one bit is 0 and the other bit is 1, the corresponding result bit is set to 1. Otherwise, the corresponding result bit is set to 0]

Select one:

- a. None
- b. 4
- c. 17
- d. 5

**Question No: 4**

What will be the output of the following algorithm for Num = 10?

1. Start
2. Declare variable I, J and Num
3. Enter Value of Num
4. Repeat for I=1 to Num
  - 4.1 Declare static variable sap and Set sap=0
  - 4.2 sap=sap+I
  - 4.3 J=sap
5. Print J

Note: Static allows value of the variable to be preserved between successive function calls.

85

65

55

CORRECT

75

Status: Correct

Mark obtained: 1/1

Hints used: 0

Level  
Sub

Subject: Programming

Subject: C Programming

```
1 What will be printed for the following pseudocode  
2  
3   Integer a,b,c  
4   Set a=10,b=3  
5   c=a/b  
6   b=a mod c  
7   print a,b,c  
8
```

I

1013

CORRECT

000

1003

1033

**Q 6** What is the maximum degree of any vertex in a simple graph with n vertices?

**Ops:** A.  n+1

B.  n

C.  2n-1



D.  n-1

---

**Q 7** Identify the point that is NOT true with respect to a Stack.

**Ops:** A.  It is not possible to insert or remove elements anywhere else except the top of the stack

B.  Stack is a dynamic set where elements are removed in the reverse order of their insertions

C.  Stack supports LIFO (Last In First Out) order of deletion of elements

D.  All the mentioned options are correct

---

**Q 8** Which of the following is a direct search technique?

**Ops:** A.  Tree search

B.  Binary search

C.  Hashing

D.  Linear search

**Q 6** Suppose queue is implemented using a linked list and its front node and rear nodes are tracked by two reference variables. Which of these reference variables will change during an insertion into a NONEMPTY queue?

- Ops:**
- A.  None of them will change
  - B.  Only the front will change
  - C.  Only the rear will change
  - D.  Both will change
- 

**Q 7** What will be the probability of selecting a random node from a given Singly Linked List?  
(Assume that there are N nodes in list)

- Ops:**
- A.   $N/2(N-1)$
  - B.   $2N - 1$
  - C.   $1/N$
  - D.   $2(N-1)/N$
- 

**Q 8** What is the maximum degree of any vertex in a simple graph with n vertices?

- Ops:**
- A.  n
  - B.   $2n-1$
  - C.   $n+1$
  - D.   $n-1$

**Q 9** Maximum height of an AVL tree with 7 nodes is:

- Ops: A.  3  
B.  4  
C.  5  
D.  6
- 

**Q 10** Identify the point that is NOT true with respect to a Stack.

- Ops: A.  Stack is a dynamic set where elements are removed in the reverse order of their insertions  
B.  It is not possible to insert or remove elements anywhere else except the top of the stack  
C.  Stack supports LIFO (Last In First Out) order of deletion of elements  
D.  All the mentioned options are correct

**Q 7** Information about which of the following options is **not** present in the adjacency matrix representation of a graph?

**Ops:** A.  Edges



B.  Nodes

C.  Direction of edges

D.  Parallel edges

**Q 9** Suppose queue is implemented using a linked list and its front node and rear nodes are tracked by two reference variables. Which of these reference variables will change during an insertion into a NONEMPTY queue?

- Ops:** A.  Only the rear will change  
B.  Only the front will change  
C.  Both will change  
D.  None of them will change

[reset answer](#)

---

**Q 10** Consider following functions and their complexities:

$$F_1(n) = 2^n$$

$$F_2(n) = n^{(3/2)}$$

$$F_3(n) = n \log n$$

$$F_4(n) = n^{(\log n)}$$

Which among the following options correctly represents the increasing order of asymptotic complexity of the functions  $F_1$ ,  $F_2$ ,  $F_3$ , and  $F_4$  respectively?

- Ops:** A.   $F_3 < F_2 < F_4 < F_1$   
B.   $F_2 < F_3 < F_1 < F_4$   
C.   $\cancel{F_3} < F_2 < F_1 < F_4$   
D.  None of the mentioned options

**Q 6** Consider a complete undirected graph with vertex set  $\{0, 1, 2, 3, 4\}$ . Entry  $W_{ij}$  in the matrix  $W$  below is the weight of the edge  $\{i, j\}$ . What is the minimum possible weight of a spanning tree  $T$  in this graph such that vertex 0 is a leaf node in the tree  $T$ ?

$$W = \begin{pmatrix} 0 & 1 & 8 & 1 & 4 \\ 1 & 0 & 12 & 4 & 9 \\ 8 & 12 & 0 & 7 & 3 \\ 1 & 4 & 7 & 0 & 2 \\ 4 & 9 & 3 & 2 & 0 \end{pmatrix}$$

- Ops: A.  10  
B.  8  
C.  7  
D.  9

**Q 22** Let  $G = (V, E)$  be a directed graph with "n" vertices. A path from " $v_i$ " to " $v_j$ " in  $G$  is sequence of vertices  $(v_i, v_{i+1}, \dots, v_j)$  such that  $(v_k, v_{k+1}) \in E$  for all "k" in "i" through "(j -1)".

Let "A" be an  $n \times n$  array initialized as follows:

$$A[j,k] = \begin{cases} 1 & \text{if } (j, k) \in E \\ 0 & \text{otherwise} \end{cases}$$

Consider the following algorithm:

```
for i = 1 to n
  for j = 1 to n
    for k = 1 to n
      A[j, k] = max(A[j, k], ( A[j, i] + A[i, k] ));
```

Which of the following statements is necessarily **true** for all "j" and "k" after the above algorithm terminates?

[Note: A simple path is a path in which no vertex appears more than once.]

**Ops:** A.  If there exists a path from  $j$  to  $k$ ,  $A[j, k]$  contains the longest path lengths from  $j$  to  $k$

B.   $A[j, k] \leq n$

C.  If there exists a path from  $j$  to  $k$ , every simple path from  $j$  to  $k$  contains most  $A[j, k]$  edges

D.  If  $A[j, j] \geq (n-1)$ , then  $G$  has a Hamiltonian cycle

**Q 2** How much time will be required to generate all the connected components in an undirected graph G with 'n' vertices and 'e' edges when the graph is represented by an adjacency list?

- Ops:**
- A.  O( $e^2$ )
  - B.  O(n)
  - C.  O(e+n)
  - D.  O(e)



**Q 10** In which of the following situations Queue implementation is useful?

- Ops:**
- A.  Load Balancing
  - B.  When a resource is shared among multiple consumers.
  - C.  When data is transferred asynchronously between two processes
  - D.  All the mentioned options

**Q 6** Which of the following applications may use a stack?

- Ops:**
- A.  Syntax analyzer for a compiler.
  - B.  Keeping track of local variables at run time.
  - C.  All the mentioned options
  - D.  A parenthesis balancing program.
- 

**Q 7** Identify the point that is NOT true with respect to a Stack.

- Ops:**
- A.  It is not possible to insert or remove elements anywhere else except the top of the stack
  - B.  All the mentioned options are correct
  - C.  Stack supports LIFO (Last In First Out) order of deletion of elements
  - D.  Stack is a dynamic set where elements are removed in the reverse order of their insertions
- 

**Q 8** Consider a Binary Tree having two pointers for each of its children. These pointers are set to NULL if the corresponding child is empty. How many NULL pointers does a Binary Tree with 'N' nodes have?

- Ops:**
- A.  The number depends on the shape of the tree.
  - B.  N
  - C.  N+1
  - D.  N-1



**Q 1** How many leaf nodes are present in a binary tree having a depth H?

- Ops:
- A.   $2^{H+1} + 1$
  - B.   $2^H$
  - C.   $2^{H-1} + 1$
  - D.   $2^H + 1$

**Q 9** Find out the number of interchanges needed to convert the given array into a max-heap.  
89, 19, 50, 17, 12, 15, 2, 5, 7, 11, 6, 9, 100

- Ops:**
- A.  5
  - B.  4
  - C.  2
  - D.  3
- 

**Q 10** Which of the following statements is/are TRUE for undirected graphs?

P: Number of odd degree vertices is even.

Q: Sum of degrees of all vertices is even.

- Ops:**
- A.  Both of P and Q
  - B.  Neither P nor Q
  - C.  Q only
  - D.  P only
-

**Q 3** The order of an internal node in a B+ tree index is the maximum number of children it can have. Suppose that a child pointer takes 6 bytes, the search field value takes 14 bytes, and the block size is 512 bytes. What is the order of the internal node?

- Ops:**
- A.  24
  - B.  26
  - C.  25
  - D.  27

**Q 4** Which of the following data structure may give overflow error, even though the current number of elements in it is less than its size?

- Ops:**
- A.  Priority queue
  - B.  None of the mentioned options
  - C.  Circular queue
  - D.  Simple queue

**Q 5** Which of the following graph analysis algorithms would be applied for finding shortest paths in a weighted graph (positive or negative edge weights) and can also be used for finding transitive closure of a relation R?

- Ops:** A.  Dijkstra's algorithm  
B.  Prim's algorithm  
C.  Meshy's algorithm  
D.  Floyd's algorithm

**Q 2** Let the following circular queue can accommodate maximum six elements with the following data:

front = 2 rear = 4

queue = \_\_\_\_\_; L, M, N, \_\_\_, \_\_\_

What will happen after ADD O operation takes place?

- Ops:**
- A.  None of the mentioned options
  - B.  front = 3 rear = 4  
queue = \_\_\_\_\_; L, M, N, O, \_\_\_
  - C.  front = 3 rear = 5  
queue = L, M, N, O, \_\_\_
  - D.  front = 2 rear = 5  
queue = \_\_\_\_\_; L, M, N, O, \_\_\_

**Q 1** The order of an internal node in a B+ tree index is the maximum number of children it can have. Suppose that a child pointer takes 6 bytes, the search field value takes 14 bytes, and the block size is 512 bytes. What is the order of the internal node?

- Ops:**
- A.  25
  - B.  24 
  - C.  27
  - D.  26

**Q 10** Consider a list of 12 numbers:

**44, 33, 11, 55, 77, 90, 40, 60, 99, 22, 88, 66**

If we try to sort the list using quick sort by taking 44 as pivot element, then which of the following list will be obtained after the fourth iteration?

- Ops:**
- A.  22, 33, 11, 77, 44, 40, 90, 60, 99, 55, 88, 66
  - B.  22, 33, 11, 55, 77, 90, 40, 60, 99, 44, 88, 66
  - C.  22, 33, 11, 40, 44, 90, 77, 60, 99, 55, 88, 66
  - D.  22, 33, 55, 11, 77, 90, 40, 60, 99, 44, 88, 66

**Q 5** What is the prefix form of an infix expression  $p + q - r * t$ ?

**Ops:** A.  None of the mentioned options

B.   $+ pq - *rt$



C.   $- +pq * rt$

D.   $- +pqr * t$

**Q 6** What will be the complexity, when two matrices of order  $p \times q$  and  $q \times r$  are multiplied?

- Ops:**
- A.  pq
  - B.  pqr
  - C.   $pq^2r$
  - D.  pr

**Q 7** Which of the following is a type of sorting which relatively passes through a list to exchange the first element with any element less than it and then repeats with a new first element?

- Ops:** A.  Bubble sort  
B.  Heap sort  
C.  Quick sort  
D.  Merge sort

**Q 9** Consider an unsorted array  $A[1..n]$  with  $n$  distinct values, the following algorithm can be used to search a given number  $x$  in that array.

1. Choose a  $k$  uniformly at random from  $1..n$ ;
2. if  $A[k]=x$  then stop else Goto 1;



Assume that  $x$  is present in the array  $A$ , what will be the expected number of comparisons required by the algorithm before it terminates?

- Ops:**
- A.   $n-1$
  - B.   $n$
  - C.   $n/2$
  - D.   $2n$

**Q 11** What will be the output of the following algorithm?

```
1.  
2. 1. Start  
3. 2. Declare a, I and b  
4. 3. for I = 0 to 4  
5. 4.     Increment a by 1  
6. 5.     if I = 3 then  
7. 6.         Print hello  
8. 7.         Get out of the loop  
9. 8.     End if  
10. 9. End for  
11. 10. Print a
```

- Ops:**
- A.  4
  - B.  1
  - C.  hello
  - D.  hello4

**Q 10** Four matrices  $A_1$ ,  $A_2$ ,  $A_3$  and  $A_4$  of dimensions  $a \times b$ ,  $b \times c$ ,  $c \times d$  and  $d \times e$  respectively can be multiplied in several ways with the different number of total scalar multiplications.

If  $a = 10$ ,  $b = 100$ ,  $c = 20$ ,  $d = 5$  and  $e = 80$ , then at least how many scalar multiplications are required here?

- Ops:**
- A.  80000
  - B.  14000
  - C.  44000
  - D.  None of the mentioned options

**Q 12** Consider the following pseudocode. How many multiplications will be performed here?

```
1. 1. M = 2
2. 2. for i = 1 to N do
3. 3.   for j = i to N do
4. 4.     for k = j + 1 to N do
5. 5.       M = M * 3
6. 6.   end for
7. 7. end for
8. 8.end for
```

- Ops:**
- A.  One-third of the product of the 3 consecutive integers.
  - B.  None of the mentioned options
  - C.  One-sixth of the product of the 3 consecutive integers.
  - D.  Half of the product of the 3 consecutive integers.

**Q 3** The number of values that can be held by an array `arr(-1...n, 1...n)` is:

Ops: A.  n

B.  n (n + 2)

C.  n (n + 1)

D.  n<sup>2</sup>

**Q 5** If a binary tree has 10 nodes, then what is the height of the tree?

Ops: A.  3

- B.  11
- C.  9
- D.  12

**Q 8** The order of an internal node in a B+ tree index is the maximum number of children it can have. Suppose that a child pointer takes 6 bytes, the search field value takes 14 bytes, and the block size is 512 bytes. What is the order of the internal node?

- Ops:**
- A.  26
  - B.  25
  - C.  24
  - D.  27

**Q 10** The height of a tree is defined as the number of edges on the longest path in the tree. The function shown in the pseudocode below is invoked as height (root) to compute the height of a binary tree rooted at the tree pointer root.

```
int height (treeptr n)
{ if (n == NULL) return -1;
  if (n → left == NULL)
    if (n → right == NULL) return 0;
    else return B1;                                // Box 1
  else {h1 = height (n → left);
        if (n → right == NULL) return (1 + h1);
        else {h2 = height (n → right);
               return B2;                          // Box 2
             }
        }
}
```

Which of the following are the appropriate expression for B1 and B2?

- Ops:**
- A.  B1 : height(n->right), B2 : max(h1,h2)
  - B.  B1 : (height(n->right)), B2 : (1 + max(h1,h2))
  - C.  B1 : (1 + height(n->right)), B2 : max(h1,h2)
  - D.  B1 : (1 + height(n->right)), B2 : (1 + max(h1,h2))

**Q 23** Let  $G = (V, E)$  be a directed graph with "n" vertices. A path from " $v_i$ " to " $v_j$ " in  $G$  is sequence of vertices  $(v_i, v_{i+1}, \dots, v_j)$  such that  $(v_k, v_{k+1}) \in E$  for all "k" in "i" through "(j - 1)".

Let "A" be an  $n \times n$  array initialized as follows:

$$A[j,k] = \begin{cases} 1 & \text{if } (j, k) \in E \\ 0 & \text{otherwise} \end{cases}$$

Consider the following algorithm:

```
for i = 1 to n  
for j = 1 to n  
for k = 1 to n  
A[j, k] = max(A[j, k], (A[j, i] + A[i, k]));
```

Which of the following statements is necessarily **true** for all "j" and "k" after the above algorithm terminates?

[Note: A simple path is a path in which no vertex appears more than once.]

- Ops:**
- A.  If  $A[j, j] \geq (n-1)$ , then  $G$  has a Hamiltonian cycle
  - B.  If there exists a path from  $j$  to  $k$ ,  $A[j, k]$  contains the longest path lengths from  $j$  to  $k$
  - C.  If there exists a path from  $j$  to  $k$ , every simple path from  $j$  to  $k$  contains most  $A[j, k]$  edges
  - D.   $A[j, k] \leq n$

[Note: 1. 'pow (x, y)'- used to return x raised to the power y

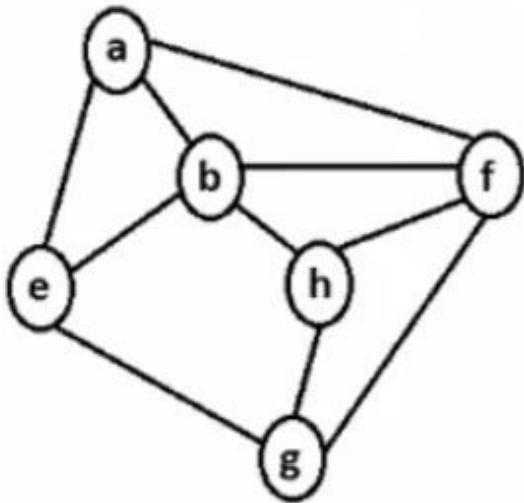
2. 'mod' finds the remainder after the division of one number by another. For example, the expression "5 mod 2" would evaluate to 1 because 5 divided by 2 leaves a quotient of 2 and a remainder of 1]

- Ops:** A.  28787  
B.  None of the mentioned options  
C.  5456  
D.  7676

**Q 1** If a node having two children is deleted from a binary tree, it is replaced by its:

- Ops:**
- A.  None of the mentioned options
  - B.  Inorder successor
  - C.  Inorder predecessor
  - D.  Preorder predecessor

**Q 3** Consider the following graph:



Which of the following sequences are depth-first traversals of the above graph?

1. a b e g h f
2. a b f e h g
3. a b f h g e
4. a f g h b e



Choose the correct answer from the options given below.

- Ops:**
- A.  Only 1, 3, and 4
  - B.  Only 2, 3, and 4
  - C.  Only 1 and 4
  - D.  Only 1, 2, and 4

**Q 18** Consider the following operation along with Enqueue and Dequeue operations on queues, where k is a global parameter

```
1.  
2. MultiDequeue (Q)  
3. {  
4.     n = k  
5.     while (Q is not empty) and (n > 0)  
6.     {  
7.         Dequeue (Q)  
8.         n = n-1  
9.     }  
10. }
```

What is the worst-case time complexity of a sequence of 'm' MultiDequeue () operations on an initially empty queue?

- Ops:
- A.   $\Theta(m)$
  - B.   $\Theta(m^2)$
  - C.   $\Theta(mk)$
  - D.   $\Theta(m + k)$

**Q 4** Maximum possible number of nodes in the Binary Tree at level 5 is:

- Ops: A.  16  
B.  31  
C.  30  
D.  28

**Q 5** What will be the complexity, when two matrices of order  $p \times q$  and  $q \times r$  are multiplied?

- Ops:
- A.   $pq^2r$
  - B.   $pr$
  - C.   $pqr$
  - D.   $pq$

**Q 6** Which of the following data structure may give overflow error, even though the current number of elements in it is less than its size?

- Ops:**
- A.  Simple queue
  - B.  Priority queue
  - C.  None of the mentioned options
  - D.  Circular queue

**Q 8** If L is the left node, M is the root node and R is the right node of a binary tree, then an L-M-R traversal can be termed as:

- Ops:**
- A.  Pre-order traversal
  - B.  In-order traversal
  - C.  Post-order traversal
  - D.  None of the mentioned options

**Q 9** Suppose a binary search tree is generated by inserting in order of the following integers:

50, 15, 62, 5, 20, 58, 91, 3, 8, 37, 60, 24

What would be the number of nodes in the left subtree and right subtree of the root respectively?

- Ops:** A.  8, 3  
B.  7, 4  
C.  4, 7  
D.  3, 8

**Q 3** Consider a complete undirected graph with vertex set  $\{0, 1, 2, 3, 4\}$ . Entry  $W_{ij}$  in the matrix  $W$  below is the weight of the edge  $\{i, j\}$ .

What is the minimum possible weight of a spanning tree  $T$  in this graph such that vertex 0 is a leaf node in the tree  $T$ ?

$$W = \begin{pmatrix} 0 & 1 & 8 & 1 & 4 \\ 1 & 0 & 12 & 4 & 9 \\ 8 & 12 & 0 & 7 & 3 \\ 1 & 4 & 7 & 0 & 2 \\ 4 & 9 & 3 & 2 & 0 \end{pmatrix}$$

**Ops:** A.  8

B.  9

C.  7

D.  10

- Q 8** The height of a tree is defined as the number of edges on the longest path in the tree. The function shown in the pseudocode below is invoked as height (root) to compute the height of a binary tree rooted at the tree pointer root.

```
int height (treeptr n)
{ if (n == NULL) return -1;
  if (n → left == NULL)
    if (n → right == NULL) return 0;
    else return [B1];                                // Box 1
  else {h1 = height (n → left);
        if (n → right == NULL) return (1 + h1);
        else {h2 = height (n → right)}  
          return [B2];                            // Box 2
      }
  }
}
```

Which of the following are the appropriate expression for B1 and B2?

- Ops:**
- A.  B1 : (1 + height(n->right)), B2 : max(h1,h2)
  - B.  B1 : (height(n->right)), B2 : (1 + max(h1,h2))
  - C.  B1 : height(n->right), B2 : max(h1,h2)
  - D.  B1 : (1 + height(n->right)), B2 : (1 + max(h1,h2))

**Q 10** The complexity of the insertion sort algorithm in worst case is:

- Ops: A.  O( $n^2$ )
- B.  O( $n-1$ )
- C.  O( $n$ )
- D.  O( $n \log n$ )

**Q 6** What is the maximum degree of any vertex in a simple graph with  $n$  vertices?

- Ops:** A.  n  
B.   $n+1$   
C.   $n-1$   
D.   $2n-1$



**Q 7** Which of the following is a direct search technique?

- Ops:** A.  Hashing  
B.  Tree search  
C.  Binary search  
D.  Linear search

**Q 8** Consider a Binary Tree having two pointers for each of its children. These pointers are set to NULL if the corresponding child is empty. How many NULL pointers does a Binary Tree with ' $N$ ' nodes have?

- Ops:** A.  The number depends on the shape of the tree.  
B.   $N+1$   
C.   $N-1$   
D.  N

**Q 9** Which of the following statements is/are TRUE for undirected graphs?

P: Number of odd degree vertices is even.

Q: Sum of degrees of all vertices is even.

**Ops:** A.  P only

B.  Q only

C.  Both of P and Q

D.  Neither P nor Q

---

**Q 10** Suppose queue is implemented using a linked list and its front node and rear nodes are tracked by two reference variables. Which of these reference variables will change during an insertion into a NONEMPTY queue?

**Ops:** A.  Only the rear will change

B.  Both will change

C.  Only the front will change

D.  None of them will change

**Q 2** How many leaf nodes are present in a binary tree having a depth H?

- Ops:
- A.   $2^H + 1$
  - B.   $2^H$
  - C.   $2^{H+1} + 1$
  - D.   $2^{H-1} + 1$



**Q 8** Records are randomly distributed by a hash function in a space that can hold  $N$  number of records. The probability that the  $m^{\text{th}}$  record is the first record to result in a collision is:

- Ops:**
- A.   $[(N - 1)(N - 2) \dots (N - (m - 2))(m - 1)] / N^{m-1}$
  - B.   $[(N - 1)(N - 2) \dots (N - (m - 1))(m - 2)] / N^m$
  - C.   $[(N - 1)(N - 2) \dots (N - (m - 1))(m - 2)] / N^{m-1}$
  - D.   $[(N - 1)(N - 2) \dots (N - (m - 2))(m - 1)] / N^m$

**Q 13** Let  $G = (V, E)$  be a directed graph with "n" vertices. A path from " $v_i$ " to " $v_j$ " in  $G$  is sequence of vertices  $(v_i, v_{i+1}, \dots, v_j)$  such that  $(v_k, v_{k+1}) \in E$  for all "k" in "i" through "(j - 1)".

Let "A" be an  $n \times n$  array initialized as follows:

$$A[j,k] = \begin{cases} 1 & \text{if } (j, k) \in E \\ 0 & \text{otherwise} \end{cases}$$

Consider the following algorithm:

```
for i = 1 to n
  for j = 1 to n
    for k = 1 to n
      A[j, k] = max(A[j, k], ( A[j, i] + A[i, k] ));
```



Which of the following statements is necessarily **true** for all "j" and "k" after the above algorithm terminates?

[Note: A simple path is a path in which no vertex appears more than once.]

- Ops:**
- A.   $A[j, k] \leq n$
  - B.  If there exists a path from  $j$  to  $k$ ,  $A[j, k]$  contains the longest path lengths from  $j$  to  $k$
  - C.  If  $A[j, j] \geq (n-1)$ , then  $G$  has a Hamiltonian cycle
  - D.  If there exists a path from  $j$  to  $k$ , every simple path from  $j$  to  $k$  contains most  $A[j, k]$  edges

**Q 1** A complete graph can have \_\_\_\_\_ spanning trees.

Ops: A.   $n^{n-2}$

B.   $n^n + 1$

C.   $n^2$

D.   $n^n$

---

**Q 2** When we update an imperative data structure we typically accept that:

Ops: A.  the old version of the data structure will be available

B.  both old and new version of data structures will be available

C.  none of the mentioned options

D.  the old version of the data structure will no longer be available

**Q 3** Which of the following data structure uses hierarchical data model?

Ops: A.  Array

B.  Queue

C.  Tree

D.  Stack

---

**Q 4** The working principle of the queue is:

1. First-In-First-Out (FIFO)

2. Last-In-First-Out(LIFO)

Choose the correct answer from the options given below.

Ops: A.  Only 2

B.  Neither 1 nor 2

C.  Both 1 and 2 depending on the situation

D.  Only 1

**Q 5** Which of the following data structure does not keep the track of address of every element in the list?

- Ops: A.  String  
B.  Stack  
C.  Queue  
D.  Linear Array
- 

**Q 6** What is the time complexity of Bellman-Ford single-source shortest path algorithm on a complete graph of  $n$  vertices?

- Ops: A.   $\Theta(n^3)$   
B.   $\Theta(n^2)$   
C.   $\Theta(n^3 \log n)$   
D.   $\Theta(n^2 \log n)$

**Q 7** To which of the following domain problems does the Knapsack problem belong?

- Ops: A.  Linear Solution  
B.  NP Complete  
C.  Sorting  
D.  Optimization
- 

**Q 8** An acyclic digraph, which has only one node with indegree 0, and other nodes have in-degree 1 is called:

- Ops: A.  Disjoint tree  
B.  Direction oriented tree  
C.  Undirected tree  
D.  Directed tree
- 

**Q 9** What would be the minimum number of arithmetic operations required to evaluate the polynomial  $p(x) = (x^5 + 4x^3 + 6x + 5)$  for a given value of "x" using only one temporary variable?

- Ops: A.  None of the mentioned options  
B.  6  
C.  7  
D.  8

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**Q 10** What will be the result of the following code snippet for the input = 1, 2, 3, 4, 5?

```
1. void Test2(struct node* head)
2. {
3.     if(head== NULL)
4.         return;
5.     printf("%d ", head->data);
6.
7.     if(head->next != NULL )
8.         Test2(head->next->next);
9.     printf("%d ", head->data);
10. }
```

**Ops:** A.  1, 3, 5, 4, 2

B.  1, 3, 5, 5, 3, 1

C.  5, 4, 3, 2, 1

D.  2, 4, 4, 2, 1

**Q 11** What will be the output of the following pseudocode?

```
1. Integer a, b, i, c, n, j
2. Set a = 0, b = 1, n = 3
3. for( each i from 1 to n)
4.     a = 0
5.     b = 1
6.     Print b
7.     for(each j from 1 to i - 1)
8.         c = a + b
9.         Print c
10.        a = b
11.        b = c
12.    end for
13.    Go to next line
14. End for
```

Ops: A.  3  
2 3  
1 2 3

B.  3  
3 2  
3 2 1

C.  1  
1 1  
1 1 2

D.  1  
1 2  
1 2 3

**Q 12** What will be the output of the following pseudocode for a = 10?

```
1. Integer fun(Integer a)
2.     if(a EQUALS 0)
3.         return 0
4.     otherwise if(a EQUALS 1)
5.         return 1
6.     otherwise
7.         return (a * (a - 1) + fun(a - 3))
8. End function fun()
```

Ops: A.  None of the mentioned options  
B.  121  
C.  140  
D.  145

**Q 13** What will be the output of the following pseudocode for n = 1?

```
1. void reverse(int n)
2.     if (n greater than 5)
3.         exit
4.     Print n
5.     return reverse(n++)
6. End function reverse()
```

[Note: n++ typically means, it is increasing the value of a variable by 1]

**Ops:** A.  It will print 1 infinite times

B.  1 2 3 4 5

C.  1 2 4 6 8

D.  None of the mentioned options

**Q 14** What will be the output of the following pseudocode?

```
1. Integer i, sum
2. Set i = 1, sum = 0
3. sum = sum + i //Line 3
4. if(sum > 500)
5.     Print i
6. else
7.     i = i + 1
8.     Go to line number 3
9. End if
```

**Ops:** A.  32

B.  28

C.  45

D.  36

**Q 15** What will be the output of the following pseudocode?

```
1. Integer n, d, a, b
2. Set n = 456, a = 0, b = 1
3. While( n > 0 )
4.     d = n mod 10
5.     a = a + d
6.     b = b * d
7.     n = n / 10
8. End While
9. Print a
10. Print b
```

Ops: A.  15

120

B.  654

120

C.  None of the mentioned options

D.  12

24

**Q 16** What will be the output of the following pseudocode?

```
1. Integer x, y, z
2. x = 0
3. y = 1
4. x = y = z = 8
5. Print x
```

Ops: A.  8

B.  None of the mentioned options

C.  0

D.  1

**Q 17** What will be the output of the following pseudocode?

1. Integer x, y, z, a
2. Set y = 2
3. Set x = (y = y \* 2) + (z = a = y)
4. Print x

Ops: A.  7

B.  8

C.  5

D.  9

**Q 18** What will be the output of the following pseudocode?

1. Integer c, n
2. Set n = 6
3. Set c = n
4. Print c //Line 4
5. c = c - 2
6. if(c > 0)
7. GO to line number 4
8. end if

Ops: A.  2 4 6

B.  6 4 2 0

C.  6 4 2

D.  0 2 4 6

**Q 19** What will be the output of the following pseudocode?

```
1. Integer x, y
2. for( each x from 1 to 11)
3.         x = x + 2
4. end for
5. Print x
```

**Ops:** A.  12

B.  10

C.  11

D.  13

**Q 20** What will be the output of the following pseudocode?

```
1. Integer n, j, k, c, t, b, array[5]
2. set n = 7, c = 1
3. Set array[5] = {1, 6, 7, 11, 13}
4. b = array[0]
5. for(each k from 1 to n - 3 )
6.         b = b ^ array[k]
7. end for
8. for(each k from 2 to n - 1)
9.         c = c ^ b
10. end for
11. c = c ^ k
12. Print c
```

[Note:  $\wedge$  is the bitwise exclusive OR operator that compares each bit of its first operand to the corresponding bit of its second operand. If one bit is 0 and the other bit is 1, the corresponding result bit is set to 1. Otherwise, the corresponding result bit is set to 0]

**Ops:** A.  5

B.  None of the mentioned options

C.  4

D.  17

**Q 21** What will be the output of the following code?

```
1. Integer i, j, k, sum = 0
2.     for (i=0; i<5; i++)
3.         for(j=0; j<3; j++)
4.             sum= i + j
5.             for (k=0; k<2; k++)
6.                 sum = sum + k
7.             End for
8.         End for
9.     End for
10. Print sum
```

- Ops:**
- A.  9
  - B.  17
  - C.  13
  - D.  7

**Q 22** What will be the output of the following pseudocode?

```
1. Integer a[ ], k, l, m
2. Set a[10]={24, 16, 22, 32, 18}
3. Set l = 0
4. for(k from 1 to 6) and Increment K by 2 for each iteration
5.     l = l + a[k+1]
6. end for
7. m = l / 2
8. Print m
```

- Ops:**
- A.  34
  - B.  20
  - C.  62
  - D.  18

**Q 23** What will be the output of the following pseudocode?

```
1. Integer p, q, r
2. Set q = 20
3. for(each p from 2 to 6)
4.         q = q + p
5. end for
6. r = q / 5
7. Print c
```

- Ops:**
- A.  6
  - B.  8
  - C.  None of the mentioned options
  - D.  10

**Q 24** What will be the output of the following pseudocode for a = 1?

```
1. Integer fun(Integer a)
2. if(a < 3)
3.     a = a + 2
4.     fun(fun(a))
5. end if
6. return a
7. End function fun()
```

- Ops:**
- A.  1
  - B.  0
  - C.  5
  - D.  3

**Q 25** What will be the output of the following pseudocode?

```
1. Integer n, beg, end
2. Set beg = 5, end = 7, sum = 0
3. if (beg > end)
4.     Print sum + 1
5. else
6.     for(n=end; n>=beg; n=n-1)
7.         sum = sum + n
8.         n = n - 1
9.     End for loop
10.    Print n
```

- Ops:**
- A.  7
  - B.  9
  - C.  6
  - D.  3

**Q 1** Which of the following data structure does not keep the track of address of every element in the list?

- Ops: A.  Linear Array  
B.  String  
C.  Stack  
D.  Queue
- 

**Q 2** Periodic collection of all the free memory space to form a contiguous block of free space by an operating system is called:

- Ops: A.  Dynamic Memory Allocation  
B.  Collision  
C.  Garbage collection  
D.  Concatenation

**Q 3** Which of the following formula will correctly calculate the memory address of the third element of an array?  
(w is the number of words per memory cell for the array)

- Ops: A.  LOC(Array[3])=Base(Array[4])+(3-Upper bound)  
B.  LOC(Array[3])=Base(Array[3])+(3-lower bound)  
C.  LOC(Array[3]=Base(Array)+w(3-lower bound)  
D.  Information is not adequate to solve the given problem
- 

**Q 4** Data structure representation in memory is termed as:

- Ops: A.  File structure  
B.  Recursive data type  
C.  Storage structure  
D.  Abstract data type
- 

**Q 5** What do we call the binary tree nodes with no successor?

- Ops: A.  End Nodes  
B.  Last Nodes  
C.  Terminal Nodes  
D.  Final Nodes
- 

**Q 6** What is the time complexity of Bellman-Ford single-source shortest path algorithm on a complete graph of n vertices?

- Ops: A.   $\Theta(n^2)$   
B.   $\Theta(n^3 \log n)$   
C.   $\Theta(n^3)$   
D.   $\Theta(n^2 \log n)$
-

**Q 7** Which of the following is the correct code for enqueue operation?

Ops: A.

```
1. int enqueue() {  
2.     if(isempty())  
3.         return 0;  
4.     int data = queue[front];  
5.     front = front + 1;  
6.     return data;  
7. }
```

B.

```
1. int enqueue(int data)  
2.     if(isfull())  
3.         return 0;  
4.     rear = rear + 1;  
5.     queue[rear] = data;  
6.     return 1;  
7. end procedure
```

C.

```
1. int enqueue(int data)
2.   if(isempty())
3.     return 0;
4.   rear = rear + 1;
5.   queue[rear] = data;
6.   return 1;
7. end procedure
```

D.

```
1. int enqueue() {
2.   if(isfull())
3.     return 0;
4.   int data = queue[front];
5.   front = front + 1;
6.   return data;
7. }
```

**Q 8** Suppose a stack implementation supports an instruction REVERSE, which reverses the order of elements on the stack, in addition to the PUSH and POP instructions. Which of the following statements is TRUE with respect to this modified stack?

- Ops:
- A.  A queue can be implemented where ENQUEUE takes a single instruction and DEQUEUE takes a sequence of two instructions
  - B.  A queue can be implemented where ENQUEUE takes a sequence of three instructions and DEQUEUE takes a single instruction
  - C.  A queue cannot be implemented using this stack
  - D.  A queue can be implemented where both ENQUEUE and DEQUEUE take a single instruction each

**Q 9** Pick out the correct statement to be filled in 'if' loop to meet the "is empty" condition in a queue.

```
1. bool isempty() {
2.   if(_____)
3.     return true;
4.   else
5.     return false;
6. }
```

- Ops:
- A.  front > 0 || front < rear
  - B.  front < 0 && front > rear
  - C.  front > 0 && front < rear
  - D.  front < 0 || front > rear



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**Q 9** Pick out the correct statement to be filled in 'if' loop to meet the "is empty" condition in a queue.

```
1. bool isempty() {  
2.     if(_____  
3.         return true;  
4.     else  
5.         return false;  
6. }
```

- Ops:
- A.  front > 0 || front < rear
  - B.  front < 0 && front > rear
  - C.  front > 0 && front < rear
  - D.  front < 0 || front > rear

**Q 10** A machine took 200 seconds to sort 200 names, using bubble sort. In 800 seconds, it can approximately sort:

- Ops:
- A.  800 names
  - B.  850 names
  - C.  400 names
  - D.  750 names



**Q 11** What will be the output of the following pseudocode for n = 99?

```
1. Integer fun (Integer n)  
2.     if ( n > 100 )  
3.         return n - 10  
4.     return fun ( fun ( n + 11 ) )  
5. End Function fun()
```

- Ops:
- A.  91
  - B.  99
  - C.  110
  - D.  121

**Q 12** What will be the output of the following pseudocode?

1. Integer value, n, num
2. Set value = 1, n = 45
3. while(value less than equal to n)
4.     value = value << 1
5. end loop
6. Print num

[Note: << is left shift operator, it takes two numbers, left shifts the bits of the first operand, the second operand decides the number of places to shift]

- Ops:
- A.  32
  - B.  60
  - C.  45
  - D.  46

**Q 13** What will be the output of the following pseudocode?

1. Integer n, beg, end
2. Set beg = 5, end = 7, sum = 0
3. if (beg > end)
4.     Print sum + 1
5. else
6.     for(n=end; n>=beg; n=n-1)
7.         sum = sum + n
8.         n = n - 1
9.     End for loop
10.   Print n

- Ops:
- A.  7
  - B.  3
  - C.  9
  - D.  6

**Q 14** What will be the output of the following pseudocode if  $n = 3$  and elements of the array are 12, 24, 64, 72, 88?

```
1. Integer fun(Integer a[], Integer n)
2.     Integer x
3.     if(n IS EQUAL TO 1)
4.         return a[3]
5.     else
6.         x = fun(a, n - 2)
7.     end if
8.     if(x < a[n])
9.         return x
10.    else
11.        return a[n+1]
12.    end if
13. End Function fun()
```

- Ops:
- A.  24
  - B.  100
  - C.  60
  - D.  88

**Q 15** What will be the output of the following pseudocode?

```
1. Integer p, q, r
2. Set q = 20
3. for(each p from 2 to 6)
4.     q = q + p
5. end for
6. r = q / 5
7. Print c
```

- Ops:
- A.  6
  - B.  None of the mentioned options
  - C.  10
  - D.  8

**Q 16** What will be the output of the following pseudocode for input n=5?

```
1. Integer fun(Integer n)
2.     if ( n IS EQUAL TO 0)
3.         return 0
4.     otherwise if( n is equal to 1)
5.         return 1
6.     otherwise
7.         return (n * n + fun(n-2))
8. End Function fun()
```

Ops: A.  45

B.  35

C.  40

D.  25

**Q 17** What will be the output of the following pseudocode?

```
1. Integer a[ ], k, l, m
2. Set a[10]={24, 16, 22, 32, 18}
3. Set l = 0
4. for(k from 1 to 6) and Increment K by 2 for each iteration
5.     l = l + a[k+1]
6. end for
7. m = l / 2
8. Print m
```

Ops: A.  18

B.  62

C.  20

D.  34

**Q 18** What will be the output of the following pseudocode?

```
1. Integer a, b, v, c
2. Set a = 7, b = 12, v = 70
3. while(v > 5)
4.     a = a - v
5.     c = (a + b) mod 10
6.     while(c > 7)
7.         b = b + c
8.     end while
9.     v = v / 2
10. end while
11. Print b, c
```

- Ops:**
- A.  16 82
  - B.  12 1
  - C.  12 -1
  - D.  14 -2

**Q 19** What will be the output of the following pseudocode?

```
1. Double b
2. Set b = 3 & 3 && 4 || 6 | 6
3. Print b
```

[Note: &: bitwise AND - The bitwise AND operator (&) compares each bit of the first operand to the corresponding bit of the second operand. If both bits are 1, the corresponding result bit is set to 1. Otherwise, the corresponding result bit is set to 0]

&&: Logical AND - The logical AND operator (&&) returns the boolean value true (or 1) if both operands are true and return false (or 0) otherwise

||: bitwise OR - The bitwise OR operator (|) compares each bit of the first operand to the corresponding bit of the second operand. If at least one corresponding bit of two operands is 1, the corresponding result bit is set to 1. Otherwise, the corresponding result bit is set to 0

||: logical OR - The logical OR operator (||) returns the boolean value true (or 1) if either or both operands is true and returns false (or 0) otherwise]

- Ops:**
- A.  2.0000
  - B.  This code will produce system dependant output
  - C.  0.0000
  - D.  1.0000

**Q 20** What will be the output of the following pseudocode?

1. Integer a, b, c
2. Set a = 10, b = 3
3. c = a / b
4. b = a MOD c
5. Print a, b and c

**Ops:** A.  10 1 3

B.  10 3 3

C.  0 0 0

D.  10 0 3

**Q 21** What will be the output of the following pseudocode?

1. Integer p, q, r
2. Set p = 2, q = 7, r = -1
3. p = p + q + r - 9
4. q = p + r - 9
5. if( p > q)  
6.     Print "Good Bye"
7. else  
8.     Print "Take Care"

**Ops:** A.  Good Bye

B.  Nothing will be printed

C.  Take Care

D.  Good Bye Take Care

**Q 22** What will be the output of the following pseudocode?

```
1. Integer n, j, k, c, t, b, array[5]
2. set n = 7, c = 1
3. Set array[5] = {1, 6, 7, 11, 13}
4. b = array[0]
5. for(each k from 1 to n - 3 )
6.     b = b ^ array[k]
7. end for
8. for(each k from 2 to n - 1)
9.     c = c ^ b
10. end for
11. c = c ^ k
12. Print c
```

[Note:  $\wedge$  is the bitwise exclusive OR operator that compares each bit of its first operand to the corresponding bit of its second operand. If one bit is 0 and the other bit is 1, the corresponding result bit is set to 1. Otherwise, the corresponding result bit is set to 0]

- Ops:
- A.  4
  - B.  17
  - C.  None of the mentioned options
  - D.  5

**Q 23** What will be the output of the following pseudocode for  $n = 1$ ?

```
1. void reverse(int n)
2.     if (n greater than 5)
3.         exit
4.     Print n
5.     return reverse(n++)
6. End function reverse()
```

[Note:  $n++$  typically means, it is increasing the value of a variable by 1]

- Ops:
- A.  It will print 1 infinite times
  - B.  None of the mentioned options
  - C.  1 2 4 6 8
  - D.  1 2 3 4 5

**Q 24** What will be the output of the following code?

```
1. Integer i, j, k, sum = 0
2.     for (i=0; i<5; i++)
3.         for(j=0; j<3; j++)
4.             sum= i + j
5.             for (k=0; k<2; k++)
6.                 sum = sum + k
7.             End for
8.         End for
9.     End for
10. Print sum
```

Ops: A.  9

B.  7

C.  13

D.  17

**Q 25** What will be the output of the following pseudocode?

```
1. Integer a, b, x, y
2. Set a = -1, b = -a //line 2
3. x = (a > 0) AND (b < 0) OR (a < 0)AND(b > 0)
4. y = (a <= 0) OR (b >= 0) AND (a >= 0) OR (b <= 0)
5. if( x IS EQUAL TO y)
6.     Print 1
7. else
8.     Print 0
9. end if
```

Ops: A.  0

B.  Error in line 2

C.  1

D.  None of the mentioned options

**Q 1** In an undirected graph  $G$ , the depth-first traversal is performed and let  $T$  be the resulting depth-first search tree. If  $u$  be a vertex in  $G$  and  $v$  be the first new (unvisited) vertex visited after visiting  $u$  in the traversal, then which of the following statements is always **true**?

Ops: A.  { $u,v$ } must be an edge in  $G$ , and  $v$  is a descendant of  $u$  in  $T$

B.  If { $u,v$ } is not an edge in  $G$  then  $u$  is a leaf in  $T$

C.  If { $u,v$ } is not an edge in  $G$  then  $u$  and  $v$  must have the same parent in  $T$

D.  { $u,v$ } must be an edge in  $G$ , and  $u$  is a descendant of  $v$  in  $T$

**Q 2** What is the postfix form of the following prefix expression  $-A/B*C\$DE$ ?

Ops: A.   $A-BCDE\$*/-$

B.  None of the mentioned options

C.   $ABCDE\$*/-$

D.   $ABC\$ED*/-$

**Q 3** Data in the linked list is stored in:

1. Adjacent location
2. Different location in memory

Choose the correct answer from the options given below.

Ops: A.  Only 1

B.  Neither 1 nor 2

C.  Either 1 or 2

D.  Only 2

**Q 4** Which of the following formula will correctly calculate the memory address of the third element of an array? ( $w$  is the number of words per memory cell for the array)

Ops: A.   $LOC(Array[3])=Base(Array)+w(3-\text{lower bound})$

B.   $LOC(Array[3])=Base(Array[4])+3-\text{Upper bound}$

C.   $LOC(Array[3])=Base(Array[3])+(3-\text{lower bound})$

D.  Information is not adequate to solve the given problem

**Q 5** Which of the following operations is possible on an array?

Ops: A.  Insertion

B.  Sorting

C.  All of the mentioned options

D.  Searching

**Q 6** For which of the following tasks, sorting is useful?

1. Report Generation
2. Minimizing the storage needed
3. Making searching easier and efficient

Choose the correct answer from the options given below.

- Ops:**
- A.  Only 1
  - B.  Only 2 and 3
  - C.  Only 3
  - D.  Only 1 and 3

**Q 7** Which of the following is the simplest way of implementing a graph in C or C++?

- Ops:**
- A.  Both Adjacency matrix and Associative lists
  - B.  None of the mentioned options
  - C.  Associative lists
  - D.  Adjacency matrix

**Q 8** The running time of an algorithm is given by:

$T(m) = T(m-1)+T(m-2)-T(m-3)$ , if  $m > 3$  otherwise  $T(m) = m$  ;  
then what will be the time complexity of the given algorithm?

- Ops:**
- A.   $m^m$
  - B.   $m^3$
  - C.   $\log m$
  - D.   $m$

**Q 9** An acyclic digraph, which has only one node with indegree 0, and other nodes have in-degree 1 is called:

- Ops:**
- A.  Direction oriented tree
  - B.  Undirected tree
  - C.  Directed tree
  - D.  Disjoint tree

**Q 10** If the only use of lazy lists in a given application is monolithic, then that application:

- Ops: A.  None of the mentioned options  
B.  should use complex unsuspended lists  
C.  should use streams  
D.  should use simple suspended lists rather than streams

**Q 11** What will be the output of the following pseudocode?

1. Integer x, y, l, z
2. Set x = 1, y = 0
3. Set z = y = 1, l = x AND y
4. Print l

[Note: AND operator returns the boolean value true (or 1) if both operands are true and return false(or 0) otherwise.]

- Ops: A.  None of the mentioned options  
B.  Logical error  
C.  0  
D.  1

**Q 12** What will be the output of the following pseudocode?

1. Integer a[], k, t, m
2. Set a[] = {25, 20, 30, 18, 17}
3. Set t = 0
4. for(each k from 0 to 4)
  - 5.     t = t + a[k]
  - 6.     if(t mod 2 EQUALS 1)
    - 7.         Print True
    - 8.         otherwise
    - 9.         Print False
10. end for
11. m = t / 5
12. Print m

- Ops: A.  true true true true false

22

- B.  true false true true false  
20
- C.  true false true true false  
15
- D.  false true true true false  
20

**Q 13** What will be the output of the following pseudocode?

```
1. Integer p, q, r
2. Set q = 20
3. for(each p from 2 to 6)
4.         q = q + p
5. end for
6. r = q / 5
7. Print c
```

**Ops:** A.  8

B.  6

C.  10

D.  None of the mentioned options

**Q 14** What will be the output of the following pseudocode?

```
1. Integer rows = 4, k, l, number = 1
2. for(k = 1 to rows)
3.         for(l = 1 to k)
4.                 Print number
5.                 Print space
6.                 number=number + 1
7.                 l = l + 1
8.         end for
9.         Move to next line
10.        k = k + 1
11. end for
```

**Ops:** A.  1 2 3 4 5  
1 2 3 4  
1 2 3  
1 2  
1

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

C.  1  
1 1  
1 2 1  
1 3 3 1

---

D.  1  
2 3 2  
3 4 5 4 3  
4 5 6 7 6 5 4

**Q 15** What will be the output of the following pseudocode?

```
1. Integer n, f0, f1, f, i
2. Set n = 5, f0 = 0, f1 = 3
3. for (each i from 1 to n)
4.     f = f0 + 1
5.     Print f
6.     f0 = f1
7.     f1 = f
8. end for
```

- Ops:
- A.  1 4 2 5 3
  - B.  1 4 2 5 7
  - C.  1 4 3 2 5
  - D.  1 4 3 7 3

**Q 16** What will be the output of the following pseudocode?

```
1. Integer x
2. Set x = 2
3. if(x IS EQUAL TO 1)
4.     if(x IS EQUAL TO 0)
5.         Print "A"
6.     else
7.         Print "B"
8.     end if
9. else
10.    Print "C"
11. end if
```

- Ops:
- A.  B
  - B.  A
  - C.  C
  - D.  B C

**Q 17** What will be the output of the following pseudocode?

```
1. Integer a[5], b[5], c[5], k, l  
2. Set a[5] = {5, 9, 7, 3, 1}  
3. Set b[5] = {2, 4, 6, 8, 10}  
4. for(each k from 0 to 4)  
5.     c[k] = a[k] - b[k]  
6. end for  
7. for(each l from 0 to 4)  
8. Print c[l]  
9. end for
```

- Ops:**
- A.  7 13 13 11 11
  - B.  -3 -5 -1 5 9
  - C.  3 5 1 -5 -9
  - D.  None of the mentioned options

**Q 18** What will be the output of the following pseudocode?

```
1. Integer p, q, r  
2. Set p = 2, q = 7, r = -1  
3. p = p + q + r - 9  
4. q = p + r - 9  
5. if( p > q)  
6.     Print "Good Bye"  
7. else  
8.     Print "Take Care"
```

- Ops:**
- A.  Take Care
  - B.  Nothing will be printed
  - C.  Good Bye Take Care
  - D.  Good Bye

**Q 19** What will be the output of the following pseudocode?

```
1. Integer x
2. Set x = 259
3. if(x EQUALS 0)
4.     Print "0"
5. otherwise if(x MOD 9 EQUALS 0)
6.     Print "9"
7. otherwise
8.     Print x MOD 9
9. end if
```

**Ops:** A.  16

B.  None of the mentioned options

C.  7

D.  8

**Q 20** What will be the output of the following pseudocode?

```
1. Integer c, n
2. Set n = 6
3. Set c = n
4. Print c //Line 4
5. c = c - 2
6. if(c > 0)
7.     GO to line number 4
8. end if
```

**Ops:** A.  2 4 6

B.  0 2 4 6

C.  6 4 2 0

D.  6 4 2

**Q 21** What will be the output of the following pseudocode for  $c = 1$ ?

```
1. Integer fun(Integer c)
2.     Print c
3.     if(c<3)
4.         c = c + 2
5.         fun(fun c)
6.     end if
7.     return c
8. end function fun
```

Ops: A.  1  
      3

B.  1  
      3  
      3

C.  1  
      3  
      5

D.  3

**Q 22** What will be the output of the following pseudocode?

```
1. Integer x, y, z, a
2. Set x = 2, y = 1, z = 5
3. a = (x AND y) OR (increment z by 1)
4. Print a
```

Ops: A.  3

B.  1

C.  5

D.  2

**Q 23** What will be the output of the following pseudocode for  $x = 4$  and  $y = 5$ ?

```
1. Integer fun(int x, int y)
2.     if(x > 1)
3.         fun(x - 2, y + 2)
4.     end if
5.     Print y
6. End function fun()
```

- Ops:**
- A.  4 5 6
  - B.  7 6 5
  - C.  None of the mentioned options
  - D.  9 7 5

**Q 24** What will be the output of the following pseudocode?

```
1. Integer n, d, a, b
2. Set n = 456, a = 0, b = 1
3. While( n > 0 )
4.     d = n mod 10
5.     a = a + d
6.     b = b * d
7.     n = n / 10
8. End While
9. Print a
10. Print b
```

- Ops:**
- A.  654  
120
  - B.  None of the mentioned options
  - C.  12  
24
  - D.  15  
120

**Q 25** What will be the output of the following pseudocode for n = 2?

```
1. Integer fun(Integer n)
2.     if( n IS EQUAL TO 4)
3.         return n
4.     else
5.         return 2 * fun(n + 1)
6.     end if
7. End Function fun()
```

- Ops:**
- A.  2
  - B.  6
  - C.  4
  - D.  16