

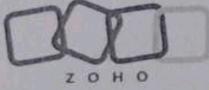
General Instructions:

- This question paper comprises 2 sections and a total of 20 questions.
 - Section A comprises 10 programming questions for 40 minutes.
 - Section B comprises 10 Aptitude questions for 35 minutes.
- The questions have no mistakes in logic, spelling, syntax, or meaning.
- Incorrect answers will not result in Negative marks.
- Each question carries one mark.
- Strictly avoid any form of malpractice; it will result in immediate disqualification.
- Write answers on the provided Answer Sheet and use the Rough Sheets for calculations.
- Please do not write or scribble anything on the question paper.

Section A - Programming**10 questions | 40 minutes**

1. What is the 'zoho' method's output with 's = "AllTheBest" ?

```
public boolean zoho(String s) {  
    int i = 0;  
  
    int j = s.length() - 1;  
  
    while(i <= j){  
  
        if(s.charAt(i) == s.charAt(j)){  
            i++;  
  
            j--;  
        }  
  
        else  
  
            return help(s, i + 1, j) || help(s, i, j - 1);  
    }  
  
    return true;
```



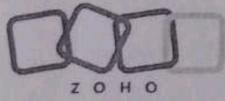
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}

```
public boolean help(String s, int i, int j){  
    while(i <= j){  
        if(s.charAt(i) == s.charAt(j)){  
            i++;  
            j--;  
        }  
        else  
            return false;  
    }  
    return true;  
}
```

2. What does this function return when provided A = [1,3,5,6,8] and target = 7?

```
public int zoho(int[] A, int target) {  
    int low = 0, high = A.length-1;  
    while(low<=high){  
        int mid = (low+high)/2;  
        if(A[mid] == target)  
            return mid;  
        else if(A[mid] > target)  
            high = mid-1;  
        else
```



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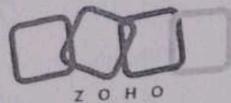
```
    low = mid+1;  
}  
  
return low;  
}
```

3. What is the 'zoho' method's output with 'nums1 = [2,3,4], nums2 = [0,1,2,3,4,5]' as input?

```
public int[] zoho(int[] nums1, int[] nums2) {  
  
    int[] ans = new int[nums1.length];  
  
    for(int i = 0; i < nums1.length; i++) {  
  
        int temp = -1, j = nums2.length - 1;  
  
        while(j >= 0 && nums2[j] != nums1[i]) {  
  
            if(nums2[j] > nums1[i])  
  
                temp = nums2[j];  
  
            j--;  
        }  
  
        ans[i] = temp;  
    }  
  
    return ans;  
}
```

4. What is the 'zoho' method's output with 'arr = [0,0,1,0,0], n = 1' as input?

```
public boolean zoho(int[] arr, int n) {  
  
    int count = 0;  
  
    for (int i = 0; i < arr.length; i++) {
```

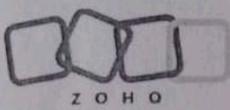


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```
if (arr[i] == 0) {  
    boolean a = (i == 0) || (arr[i - 1] == 0);  
    boolean b = (i == arr.length - 1) || (arr[i + 1] == 0);  
  
    if (a && b) {  
  
        arr[i] = 1;  
  
        count++;  
  
    }  
  
}  
  
return count >= n;  
}
```

5. "What does the 'zoho' method output for the given code?"

```
public static void zoho() {  
  
    for (int i = 0; i <= 5; i++)  
  
        System.out.print(help(5, i) + " ");  
}  
  
private static int help(int n, int k) {  
  
    if (k == 0 || k == n)  
  
        return 1;  
  
    return help(n - 1, k - 1) + help(n - 1, k);  
}
```



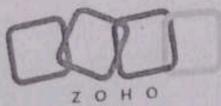
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6. What does the 'zoho' method return when given the input 'arr = [1,3,5,7,11]'?

```
public boolean zoho(int[] arr) {  
  
    for (int i = 0; i < arr.length; i++) {  
  
        int target = 2 * arr[i];  
  
        int a = 0, b = arr.length - 1;  
  
        while (a <= b) {  
  
            int mid = a + (b - a) / 2;  
  
            if (arr[mid] == target && mid != i)  
  
                return true;  
  
            if (arr[mid] < target)  
  
                a = mid + 1;  
  
            else  
  
                b = mid - 1;  
        }  
  
    }  
  
    return false;  
}
```

7. What does the 'zoho' method return when given the input 'n = 5'?

```
public int zoho(int n) {  
  
    if (n == 0)  
  
        return 0;  
  
    if (n == 1)
```



```
return 1;

int[] nums = new int[n + 1];

nums[0] = 0;

nums[1] = 1;

int ans = 1;

for (int i = 1; (2 * i + 1) <= n; i++) {

    nums[2 * i] = nums[i];

    nums[2 * i + 1] = nums[i] + nums[i + 1];

    ans = Math.max(ans, nums[2 * i + 1]);

}

return ans;
```

8. What is the output of the 'zoho' method with input 'nums = [5,2,2,3,1,4]'?

```
public int zoho(int[] nums) {

    Pair<Integer, Boolean> a = new Pair<Integer, Boolean>(-1, false);

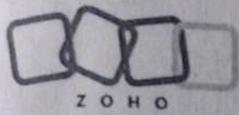
    Pair<Integer, Boolean> b = new Pair<Integer, Boolean>(-1, false);

    Pair<Integer, Boolean> c = new Pair<Integer, Boolean>(-1, false);

    for (int num : nums) {

        if ((a.getValue() && a.getKey() == num) ||
            (b.getValue() && b.getKey() == num) ||
            (c.getValue() && c.getKey() == num))

            continue;
```

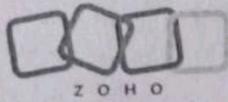


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```
if (!a.getValue() || a.getKey() <= num) {  
    c = b;  
    b = a;  
    a = new Pair<Integer, Boolean>(num, true);  
}  
  
else if (!b.getValue() || b.getKey() <= num) {  
    c = b;  
    b = a;  
    a = new Pair<Integer, Boolean>(num, true);  
}  
  
else if (!c.getValue() || c.getKey() <= num)  
    c = new Pair<Integer, Boolean>(num, true);  
}  
  
if (!c.getValue())  
    return a.getKey();  
return c.getKey();  
}
```

9. What is the 'zoho' method's output with 's = "D4V1D"'?

```
public static String zoho(String s) {  
    char[] c = s.toCharArray();  
    for(int i = 1; i < c.length; i = i + 2)  
        c[i] = (char)(c[i - 1] + c[i] - '0');  
    return String.valueOf(c);
```

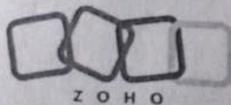


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}

10. What is the 'zoho' method's output with 's = "Zoho Corp"'?

```
public String zoho(String s) {  
  
    int sp = -1;  
  
    char[] arr = s.toCharArray();  
  
    int l = s.length();  
  
    for (int i = 0; i <= l; i++) {  
  
        if (i == l || arr[i] == ' ') {  
  
            int j = sp + 1;  
  
            int k = i - 1;  
  
            while (j < k) {  
  
                char temp = arr[j];  
  
                arr[j] = arr[k];  
  
                arr[k] = temp;  
  
                j++;  
  
                k--;  
  
            }  
  
            sp = i;  
  
        }  
  
        return new String(arr);  
    }  
}
```



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Section B - Aptitude

10 questions | 35 minutes

1. A shopkeeper sold an item (A) at a 20% loss, which originally cost ₹4500. He then used the money from this sale to buy another item (B), which he sold for a 30% profit. What is the total profit or loss from both these transactions?
2. In a school, the ratio of the number of boys to the number of girls is 5:3. If there are 40 more boys than girls, how many students are there in the school?
3. How many years younger is C compared to A, given that the combined age of A and B is 12 years more than the combined age of B and C?
4. There are three pipes, named A, B, and C, that can fill a tank together in 6 hours. They start filling the tank together, but after 2 hours, pipe C is turned off. The remaining two pipes, A and B, then take 7 more hours to fill the tank. How long would it take for pipe C to fill the tank by itself?
5. In a chess tournament, there are 6 rounds, and each player plays exactly once against every other player. How many players are there in the tournament?
6. A rectangular garden has a length that is 4 meters more than its width. If the area of the garden is 140 square meters, what are the dimensions of the garden?
7. What day of the week will it be 132 days from today, if today is Thursday?
8. The price of a shirt is reduced by 20% during a sale. If the original price was ₹500, what is the sale price of the shirt?
9. Check out this sequence: 14, 28, 20, 40, 32, 64, ... What number should come next in the sequence?
2 1 2 1 4
10. A car travels from City A to City B at a speed of 60 km/h and returns at a speed of 75 km/h. If the total travel time is 9 hours, what is the one-way distance between the two cities?