

# ANNUAL EXAMINATION : 2017-2018

Class - XI (ISC)

## Subject - Computer Science Paper 2

(Maximum Marks : 30)

(Candidates are allowed an additional 15 minutes for only reading the paper.

They must not start writing during this time.)

The total time to be spent on the Planning Session and the examination Session is three hours.

Planning Session : 90 minutes

Examination Session : 90 minutes

Note : Candidates are to be permitted to proceed to the Examination Session only after 90 minutes of the Planning session are over. This paper consists of three problems from which candidates are required to attempt any one problem.

Candidates are expected to do the following:

1. Write an algorithm for the selected problem. (Algorithm should be expressed clearly using any standard scheme such as pseudo code or in steps which are simple enough to be obviously compatible.) [3]
2. Write a program in JAVA language. The program should follow the algorithm and should be logically and syntactically correct. [5]
3. Document the program using mnemonic names/ comments, identifying and clearly describing the choice of data types and meaning of variables. [2]
4. Code /Type the program on the computer and get a printout(hard copy). Typically, this should be a program that compiles and runs correctly. [2]
5. Test run the program on the computer using the given sample data and get a printout of the output in the format specified in the problem. [5]
6. Viva - voce on the selected problem. [3]
7. Project File [10]

Solve any one of the following problems.

### Question 1

A palindrome number is a number which reads same from forward and reverse. For example 151, 232, 4334 etc. A mathematician has followed some other process for finding a palindrome of a number having two or more digits as follows :

Step 1 : Reverse the digits of the original number.

Step 2 : Add the reverse number and the original number to get a new number.

Step 3 : If the new number is a palindrome number, means the number is found as palindrome otherwise repeat all above steps by taking new number as the original number till a palindrome number is not obtained.

Repeat your process upto maximum of 15 steps.

For example : Input : num = 78

	Step 1	Step 2	Step 3	Step 4
Number :	78	165	726	1358
Reverse :	87	561	627	3531
Sum (new number)	165	726	1353	4884

Output : num = 78 its palindrome number = 4884 and found in step 4

Write a program to input a positive integer 'num' of minimum two digits (display appropriate error message if 'num' is less than two digits) and generate a Palindrome number upto 15 steps using the process of generating Palindrome as described above and output the original number (num), Palindrome number and step number where palindrome number

