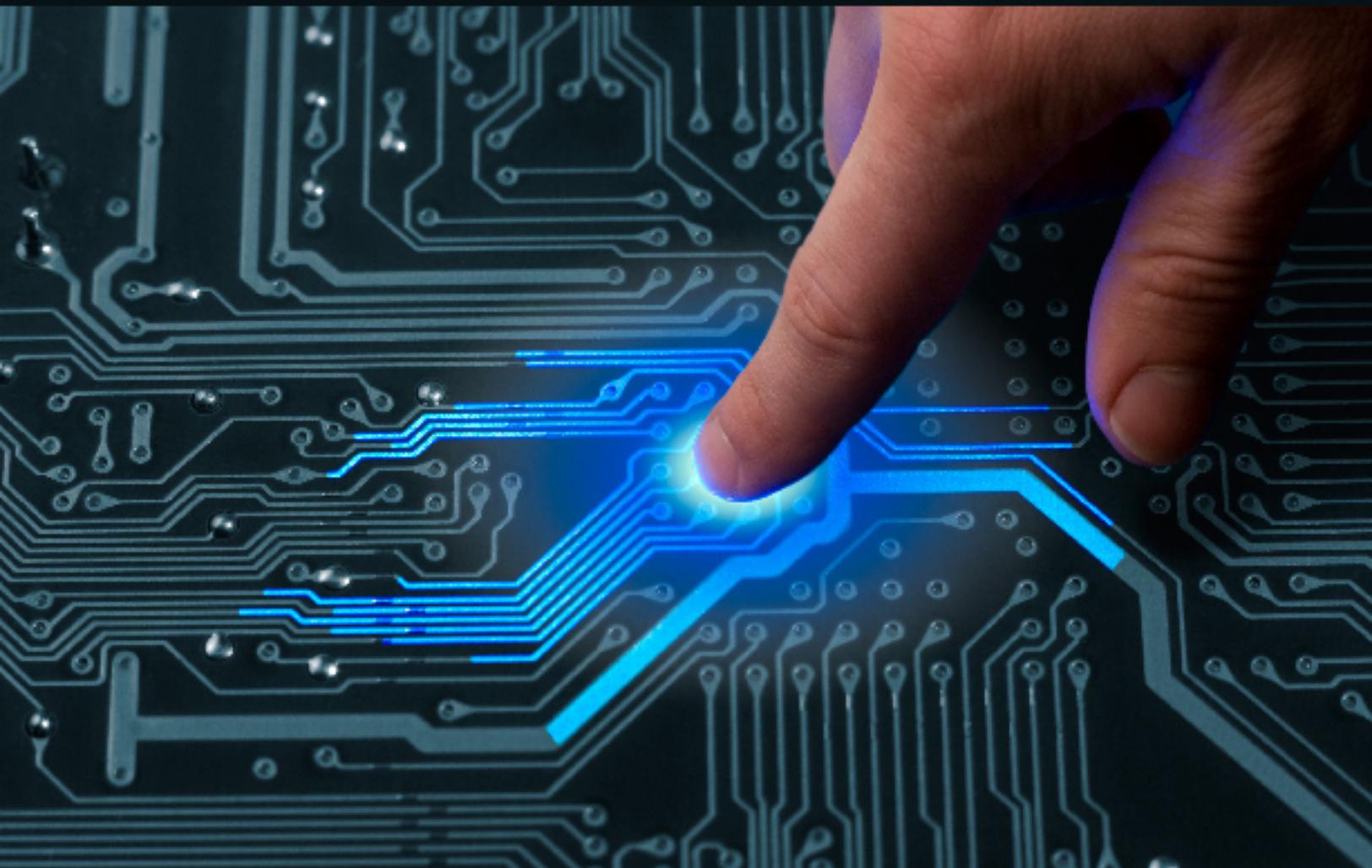


ICSE

Computer Science



CLASS 10
Sample Question Papers

COMPUTER SCIENCE

(Two Hours)

Answers to this Paper must be written on the paper provided separately.

You will **not** be allowed to write during the first **15** minutes.

This time is to be spent in reading the question paper.

The time given at the head of this Paper is the time allowed
for writing the answers.

This Paper is divided into **two** Sections, Sections **A** and **B**.

Attempt **all** questions from Section **A** and **any four** questions from Section **B**.

The intended marks for questions or parts of questions are given in brackets [].

SECTION A (20 Marks)

Attempt **all** questions.

Question 1

- (a) (i) Name universal gates.
- (ii) State one advantage of batch processing. [2]
- (b) (i) Represent the given Boolean function through a logic circuit diagram:
$$F(X, Y, Z) = X \cdot (Y \bar{Z} + \bar{Y} Z)$$
- (ii) What is the Boolean expression for $X \oplus Y$? [2]
- (c) (i) Name the high level language which was developed by IBM.
- (ii) Convert the number $(1288)_{10}$ into an octal number, [2]
- (d) (i) Convert $(101110)_2$ into a Hexadecimal number.
- (ii) Multiply 1001011 by 1101 . [2]
- (e) Differentiate between *Logical* error and *Execution* error. [2]

Question 2

- (a) Write an algorithm to find the sum of two numbers. [2]
- (b) Name *two* conditional statements and explain. [2]
- (c) Explain any *two* looping statements. [2]

- (d) Write the full form of the following:
- (i) ASCII
 - (ii) COBOL
- (e) How does a data file different from a program file?

SECTION B (60 Marks)

Attempt **any four** questions from this Section.

Each program should be written in such a way that it clearly depicts the logic of the problem.

*This should be achieved by using **Mnemonic Names** and **Comments** in the program.*

*Students have the option of using **BASIC** or **C++** for solving the given problems.*

Question 3

Write a program in BASIC or C++ to calculate the interest and total amount to be paid by entering the amount of loan and the number of years, either by simple interest method or by compound interest method, as per the choice of user.

For Simple Interest,

$$\text{Interest} = (\text{Amount} * \text{Rate} * \text{Number of Years}) / 100$$

$$\text{and Total amount} = \text{Amount} + \text{Interest}$$

For Compound Interest,

$$\text{Total amount} = \text{Amount} \left(1 + \frac{\text{Rate}}{100} \right)^{\text{No of years}}$$

$$\text{Interest} = \text{Total amount} - \text{Amount.}$$

[15]

Question 4

Write a program in BASIC or C++ for the following:

- (a) Input any word in lower case and display its output in uppercase.
- (b) Total number of alphabets present in the word input.

For example, if

Lower case : snowy

Upper case: SNOWY

Total number of alphabets : 5.

[15]

Question 5

Write a program to store elements in an array of size 4×4 and perform the following. Find the sum of:

- (a) each row and display
- (b) each column and display
- (c) all the elements of the array.

[15]

Question 6

Using BASIC or C++ program, read N numbers in a single dimensional array and calculate the highest and the least number along with their corresponding positions.

For example, if

INPUT : 8, 4, 5, 1, 7

OUTPUT,

Highest : 8 Position : 1

Lowest : 1 Position : 4

[15]

Question 7

A cricket team has the following table of batting figures for a series of test matches for N number of players.

Player's Name	Runs Scored	Innings	Times Not-out
Sachin	982	11	2
Dhoni	779	14	3
Robin	775	14	1
--	--	--	--
--	--	--	--
--	--	--	--

Write a program in BASIC or C++ to create a sequential file named AVG.DAT and do the following:

- (a) Store the given data.
-

- (b) Read the figures to calculate and display the batting average of each player.
Also, print the above format.

[15]

Question 8

- (a) Develop a program using user-defined function to convert a temperature from Fahrenheit scale Celsius scale using the formula $C = (5/9) * (F - 32)$.
- (b) Write a program in BASIC or C++ using FOR Loop to print any number in reverse order.

Hint : Number entered : 1 2 3 4 5

Reverse order : 5 4 3 2 1

[15]

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Hint : Number entered : 1 2 3 4 5

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[15]

2009 ICSE computer science Question paper

Section A (40 marks)

Attempt all questions

Q1. (a) Name the four integer data types of Java. [2]

(b) What is a “ternary operator” of Java? [2]

(c) What is meant by “nesting of loops”? Give suitable example. [2]

(d) Differentiate between int and float data type. Give one example for each. [2]

(e) What is Polymorphism? Give one example. [2]

Q2. (a) What is meant by “exit controlled loop”? Give one example. [2]

(b) Differentiate between constructor and finalizer with suitable examples for each. [2]

(c) What do you understand by the term “Escape Sequence”? Give two example with proper explanation. [2]

(d) Differentiate between data abstraction and data encapsulation [4]

Q 3. (a) Give the output of the following code snippets: [2 + 2 = 4]

(i) `int f = 1, i = 2;`

`do {`

`f* = i;`

`i++;`

`} while (i < 5);`

`System.out.println (f);`

(ii) `int a = 0, p;`

`for(int i = 0; i < 5; ++i) {`

`a = a + p * i;`

`System.out.println(a);`

`}`

(b) Find error(s), if any in the following code snippets: [2 + 2 = 4]

(i) `int i [][] = {{1, 2}, {3, 4}};`

`i [1, 1] = 5;`

(ii) `int b[] = new int [10];`

`for (int i = 0; I <= b.length; ++i)`

`b[i] = 1;`

(c) Create a multidimensional array in which each there are three rows & each row has different numbers of columns: 1st row has three columns, 2nd row has 2 columns and the last row has 4 columns. [2]

Q4. (a) Write the equivalent do-while loop for the following for loop: [2]

`for (; ;)`

`{s; } //s represents any statement`

(b) Assume that $i = 1$, $j = 2$, $k = 3$, and $m = 2$. What does each of the following statements print? [2]

(i) `System.out.println (k + m < j | 3 - j >= k);`

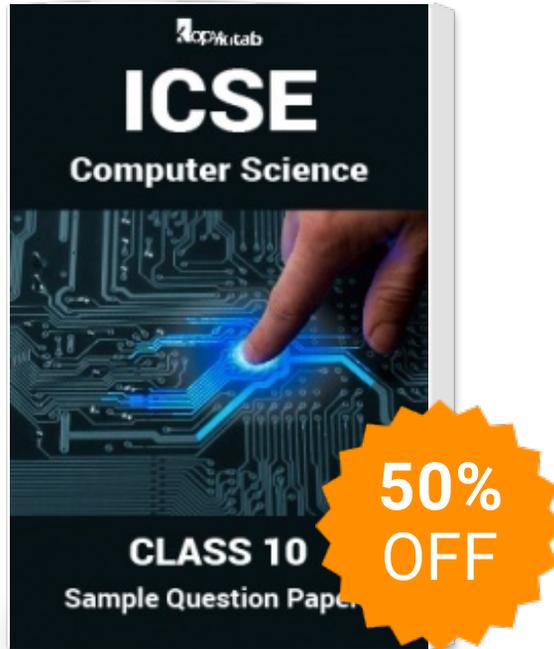
(ii) `System.out.println (! (k > m));`

(c) What would happen when the following is compiled and executed? [3 + 3 = 6]

(i) `class Example {`

`int x, y;`

ICSE Sample Question Papers For Class 10 Computer-Science



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