



Shri Vile Parle Kelavani Mandal's
C.N.M. School & N.D. Parekh Pre-Primary School
Std. X – Second Prelim Examination
Computer Applications

Max. Marks: 100

theexampapers.com

Time: 2 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.

*You are to answer **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 (40 MARKS)

*Attempt **all** questions from this Section.*

While answering all questions from this part, indicate briefly your working and reasoning, wherever required.

Question 1.

[10]

- Define two characteristics of an object.
- Explain two benefits of encapsulation.
- What is a compound statement? Give an example.
- Mention two rules for naming Identifiers.
- If $x=3$ and $y=2$, determine the values of x and y , after executing (i) and (ii) :
 - $x - = 2;$
 - $y += 3 * x - y / x;$
- What are the row and column position of the element $A[2][3]$ in a two dimensional array A?

Question 2.

[10]

- Distinguish between Entry-Control loop and Exit-Control loop. Give one example of each.
- Explain function prototype and signature.
- Differentiate between parameterized and non-parameterized constructor.
- Explain with an example, when do we require to define a variable static.
- What is the purpose served by the “import” keyword?

Question 3.

- a) When int x = 42 what will be output of the following? [2]
i) `Math.ceil(Math.sqrt(x++));`
ii) `Math.floor(Math.sqrt(++x));`
- b) What is the output of the following? [2]
i) `char c='X';`
`long m = 24;`
`long n = (++c)/(--m);`
`System.out.println(n);`
ii) `int m; char ch;`
`m = 805 / 10 + 45 % 8 + 29 % 13;`
`ch = (char) m;`
`System.out.println(ch);`
- c) Determine the value of each of the following logical expression if a= 5, b = 10 and c = -6. [2]
a) `a > b && a < c`
b) `a < b && a > c`
c) `a == c !! b > a`
d) `b > 15 && c < 0 !! a > 0`
- d) Give the term for the following [2]
i) Which operator is used to create object of a class?
ii) Name any one unconditional control statements.
iii) Function sharing same name.
iv) A package that is invoked by default in each class.
- e) What is meant by private visibility of a method? [2]
- f) Differentiate between Binary Search and Linear Search. [2]
- g) Write an equivalent java syntax for the following expression: [2]
i)
$$z = \frac{2x - 3y^4}{x + y}$$

ii)
$$x = \frac{a + b}{b^2} + 10$$
- h) What do the following functions return for : [6]
`String x = "Guten";`
`String y = "Morgan";`
`String z = x + " " + y;`
a) `System.out.println(z);`
b) `System.out.println(z.length());`

- c) `System.out.println(z.substring(4,8));`
- d) `System.out.println(z.charAt(8));`
- e) `System.out.println(z.indexOf('g'));`
- f) `System.out.println(x.toUpperCase());`

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.

[15]

Question 4.

- a) Write a program to compute and display the sum of the following series:

$2 + 5 + 10 + 17 + 26 \dots \dots \dots N$ times

- b) Write a program that prints the first n terms of the Fibonacci series using the for loop.

Question 5.

A cloth showroom has announced the following festival discounts on purchase of items :

[15]

Amount of purchase	Discount in %	
	Mill Cloth	Handloom Items
Less than Rs. 1000	2 %	5 %
Rs. 1000 to Rs. 5000	20 %	25 %
Rs. 5001 to 10000	40 %	50 %
Above 10000	50 %	60 %

Write a java program to compute the net amount paid by the customer. Assume all required values to be inputted by the user. Make use of if and switch structures.

Question 6.

[15]

Write a java class that contains a method `compound()` and a main method. The 'compound' method compute the compound interest, based on the following conditions if time is less than or equals to 1 year then $r=3\%$, if time is between 1 and 2 years then $r=5\%$ and if time grater than 2 year, $r=7\%$.

The method returns the interest to `main()`, where the result is displayed. Assume principal amount(P) and time (T) to be inputted from the user. The interest should be calculated for 10 investors.

Question 7.

[15]

Write a menu driven program, defining methods to perform the following operations on strings :

- a) Concatenate two String
- b) Check if a string terminates with a '.' (full stop)

[15]

Question 8.

WAP to accept the value for two multi dimensional array of matrix [2][2]

EXAMPLE :

A = $\begin{bmatrix} 2 & 1 \\ 5 & 6 \end{bmatrix}$ B = $\begin{bmatrix} 3 & 2 \\ 1 & 3 \end{bmatrix}$

Write a program to compute the sum of the two matrices and display the resulting matrix.

EXAMPLE: C = $\begin{bmatrix} 5 & 3 \\ 6 & 9 \end{bmatrix}$

[15]

Question 9.

Write a program to accept a number which to be search form the following array using *binary search* technique.

3 4 7 11 18 29 45 71 87 80 93 96 99

*** Best of Luck ***

Amount of purchase	Discount in %	Handloom items
Less than Rs. 1000	2 %	5 %
Rs. 1000 to Rs. 5000	20 %	25 %
Rs. 5001 to 10000	40 %	50 %
Above 10000	50 %	60 %