
COMPUTER APPLICATIONS

(Theory)

(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.

*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 (40 Marks)

*Attempt **all** questions*

Question 1

- (a) What is use of 'this' keyword in parameterized constructor ? [2]
- (b) State the differences between static and dynamic initialization . [2]
- (c) What is local variable and global variable. Explain with example. [2]
- (d) Which is not keyword in java i. Boolean ii. void iii. public [2]
- (e) `int a [] ; int b [] = new int [100] ;` what is the difference between two initialization. [2]

Question 2

- (a) State difference between constructor and method of class. [2]
- (b) `char ch [] = {'a', 'b', 'c','d'};`
`System.out.println("Hello World" + ch);` [2]
What will be the output for the above code.
- (c) Define java byte code. [2]
- (d) State the difference between operator and expression. [2]

(e) What parse function does . Explain with example.

[2]

Question 3

(a) What is the use of keyword void in function declaration. [2]

(b) Which OOP principle is used in the function overloading ?. [2]

(c) Attempt the following :

(i) Name string function which compares two strings and returns boolean value.

(ii) Write java statement to do the reverse loop from 19 to 0. [2]

[2]

(iii) Define java token.

(iv) Whats the value of y after execution.

```
int y = 5 ; [2]
y -- = ++y + ++y + ++y * 3;
```

(v) `int a [] = { 'a' , 'b' , 'c' , 'A' , 'B' , 'C' , 'D' , 'E' };
System.out.println((int) a[3]);
System.out.println(a.length);
System.out.println(a[4]);`

what will be the output of the above code.

[2]

- (d) Write output `int i = 20;`
 `for(;i<=30; i+=4)`
 `System.out.print(i);`
 `System.out.println(i);` [2]
- (e) Name the formal and actual parameter [2]
- (f) What is the difference between next () and nextLine () ? [2]

SECTION B (60 Marks)

Attempt *any four* questions from this Section.

*The answers in this Section should consist of the **Programs in either Blue J environment or any program environment with Java as the base.** Each program should be written using **Variable descriptions/Mnemonic Codes** such that the logic of the program is clearly depicted.*

Flow-Charts and Algorithms are not required.

Question 4

Define a class salary described as below:-

Data Members : Name, Address, Phone, Subject Specialization, Monthly Salary, Income Tax.

Member methods : (i) To accept the details of a teacher including the monthly salary.

(ii) To display the details of the teacher.

(iii) To compute the annual Income Tax as 5% of the annual salary above Rs.1,75,000/-.

Write a main method to create object of a class and call the above member method.

[15]

Question 5

Write a program to initialize the given data in an array and find the minimum and maximum values along with the sum of the given elements.

Numbers : 2 5 4 1 3

Output : Minimum value : 1

Maximum value : 5

Sum of the elements :

[15]

Question 6

Define a class to overload following function :

$$\text{double area (double a , double b, double c) } \quad A = \sqrt{s(s-a)(s-b)(s-c)}$$

$$s = (a + b + c) / 2$$

$$\text{double area(double x , double y, double h) } \quad \text{area} = 1/2 \text{ h}*(x+ y)$$

$$\text{double area (double m , double n) } \quad \text{area} = 1/2 \text{ m} * \text{n}$$

[15]

Question 7

Write a program to enter a sentence from the keyboard and count the number of times a particular word occurs in it. Display the frequency of the search word.

Example:

INPUT:

Enter a sentence : the quick brown fox jumps over the lazy dog.

Enter a word to be searched : the

OUTPUT:

Searched word occurs : 2 times. |

[15]

Question 8

Write a program to create two array name A and B of same size 7. Perform the following operation :

(i) Input in an array A and find square of each number and store in array B and display both arrays simultaneously.

(ii) Display square root of each number from array A and display square root.

[15]

Question 9

Write a program to input a number from user and using binary search method find the number is present in the given array or not. Display proper message

Array is A[] = { 24, 39, 330, 343, 763, 789, 909,1001, 1212,2000 }