
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 does the default constructor provided by the compiler do? [2]
- (b) Name the operators listed below [2]
i) $>=$ ii) $--$ iii) $!$ iv) $?$:
- (c) Name i) A keyword used to call a package in the program. [2]
ii) Any one reference data types.
- (d) Why is an object called an instance of a class? [2]
- (e) What are identifiers? Give example of each identifier. [2]

Question 2

- (a) What is the function of catch block in exception handling? Where does it appear in a program? [2]
- (b) Find the output : `String a = "Sidharthissmartguy", b = "MathsMarks";`
`String h = a.substring(2, 5);`
`String k = b.substring(8).toUpperCase();` [2]
`System.out.println(h);`
`System.out.println(k.equalsIgnoreCase(h));`
- (c) [2]
(i) Name the mathematical function which is used to find sine of an angle given in radians
(ii) Name a string function which removes the blank spaces provided in the prefix and suffix of a string
- (d) Name the keyword which is used to resolve the conflict between method parameter and instance variables/fields. Explain with example. [2]

(e) `int y = 10;`

```
y+= (++y * (y++ + 5));  
System.out.println(y);
```

What will be the output of the above code ?.

[2]

Question 3

(a) The arguments of the function given in the function definition are called _____

[2]

(b) Why JVM is required in running Java program. Justify your answer.

[2]

(c) Attempt the following :

(i) Explain with example the possible loss of precision.

(ii) Explain the term type casting in java. How is it useful ?

[2]

(iii) State the difference between keyword and reserved word.

[2]

(iv) What do you mean by conventions and rules in Java ?
Explain the difference between compiler and interpreter .

[2]

(v) What do you understand by java application and java applet. Explain with example .

[2]

[2]

(d) Explain the use of continue statement in looping in Java . [2]

(e) State the purpose and return data type of the following String functions:
(i) indexOf ()
(ii) compareTo () [2]

(f) State the output of the code : int m=10;
int n=10;
for(int i = 1; i<5; i++);
m++; --n;
System.out.println("m=" +m);
System.out.println("n="+n); [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

Digital World announces seasonal discount on the laptops in the given order. [15]

Cost of the laptop	Discount
Rs.20,000 - Rs.30,000	10%
Rs.30,000 – Rs.40,000	15%
Rs.40,000 – Rs.50,000	18%
> = Rs.50,000	20%

An additional discount of 5% on all types of laptops is given. Sales tax is calculated at 12% on the price after the discounts. Define a class to accept the cost of the laptop and print the amount payable by the customer on purchase (use constructor)

[15]

Question 5

Write a program in Java to accept 10 integers in an array . Now display only those numbers having complete square root

Sample Input : 12 , 45 , 49 , 78 , 64 , 77 , 81 , 99 , 45 , 33

Sample Ouput : 49 , 64 , 81

[15]

Question 6

Write a function to suppress negative elements of an array to bottom without altering the original sequence
i.e.

if array contains 5 , -4 , 3 , -2 , 6 , -11 , 12 , -8 , 9 Then the return array will be : 5 , 3 , 6 , 12 , 9 , -4 , -2 , -11 , -8

Question 7

Write a program to input a sentence. Create a function convert(int n),
where n is an integer value in positive or negative.

This function is used to encode or decode the given string by shifting each character of a string the number of times as specified by user.

Ex.- Input- Sid Bowler

Shift value 3

Output – Vlg Erzohu

[15]

[15]

Question 8

Write a program to using menu driven mode to find value of s , where

S= 2+ 3+ 4+ 4+ 6+ 8+ 6+ 9+ 12.....100 terms

S= 2! -4! +6! -8!n

[15]

Question 9

Write a Program to print the Pascalene triangle as follows :

```
1
1 1
1 2 1
1 3 3 1
1 4 6 4 1
```

[15]