
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) Write the name of mathematical function for rounding of fractional value ? Give an example and output of the same. [2]
- (b) What is the difference between infinite loop and fall through statement?. [2]
- (c) Use code segment to show the difference. [2]
- (c) Write a java statement using conditional operator to find largest of 3 numbers ? [2]
- (d) Explain the meaning of statement : " java is compiled and both interpreted language " [2]
- (e) Explain the following terms i . static keyword ii. Escape Sequence [2]

Question 2

- (a) Write Java expression : i . $T = 2\pi\sqrt{\frac{l}{g}}$ [2]
ii. $y = 2(lb + bh + lh)/3$
- (b) what is the difference between array initialization and declaration ? [2]
- (c) What do you mean by precedence of operators ? Arrange the following in order of higher to lower precedence . [2]
i. ++ ii. () iii. <= iv []
- (d) Write the output of the following : [2]
- String str = "Student information".substring(3,10);
 - Boolean bt = "CRICKET".equalsIgnoreCase("cricket");

(e) what is the difference between == and equalsIgnoreCase(). Justify with example .

[2]

Question 3

(a) Define Wrapper class. Justify with example. [2]

(b) What is default constructor ?. Give an example. [2]

(c) Attempt the following :

(i) Use a = 10 , b = 20 and c = 30
c += (a > 0 && a <= 10) ? ++a : a/b ;
whats the value of c ? show steps .

(ii) Write differences between pure function and impure function. [2]

[2]

(iii) Give example of logical error and syntax error and justify it

(iv) Write using for loop [2]

```
int y = 19 ;  
while ( y > 0 )  
{  
    x = y % 10 ;  
    sum = sum + x * 10 ;  
    y = y / 10 ;  
}
```

[2]

(v) Evaluate the following expressions, if the values of the variables are a = 2, b=3 and

c=9

i. $a - (b++) * (--c)$

ii. $a * (++b) \% c$

[2]

(d) What is null loop ?. Give example. [2]

(e) What is fall through ?. Give an example

(f) Name the following [2]

- i. user defined type conversion
- ii. Package which is available default.

[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

Write a java program to enter a string from the user and perform the following functions :

- i. Convert all the vowels into Uppercase
- ii. convert all the consonants into lowercase .
- iii. Count the frequency of all the vowels present in string.
- iv. Count the frequency of all the consonants in the string.

[15]

[15]

Question 5

Write a java program to create an array of 10 integers and sort the array using selection sort and print the array. Also print the numbers which are divisible by 7 and all numbers not divisible by 7 from the array.

[15]

Question 6

Write a program to print the sum of negative numbers, sum of positive even numbers and sum of positive odd numbers from a list of numbers(N) entered by the user. The list terminates when the user enters a zero. [15]

Question 7

Write a program to accept a string in lowercase.
Convert all the first characters of the string in uppercase and display the new string.
example :
input : cricket is fun game
output : Cricket Is Fun Game

[15]

[15]

Question 8

Write a program to input a passage of text and convert entire text into lower case and print only those words which contain only two vowels in them.
example :
input : we love our country India
output : love our country

[15]

Question 9

Write a program using if else statement to print the following series or pattern below :

if choice is 1 : Print the sum of the series

[15]

$1 * 16 + 2 * 15 + 3 * 14 + \dots + 16 * 1$

if choice is 2 : print pattern

```
A A A A A A A A A A
  A A A A A A A A A
    A A A A A A A A
      A A A A A A A
        A A A A A A
          A A A A A
            A A A A
              A A A
                A A
                  A
```