
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) State one difference between primitive literals float and double . [2]
- (b) What is an infinite loop. Write a statement for infinite loop. [2]
- (c) Arrange the operators in the order of higher precedence. [2]
(1)++ (2)&& (3)>= (4)%
- (d) What is final variable and static variable ? [2]
- (e) What is number of bytes char occupies. Write its range also . [2]

Question 2

- (a) What is the difference between keyword parse and function valueOf(). Give example of each. [2]
- (b) Write a program code to accept a character input and check whether its digit using its ASCII code. Print character using suitable message. [2]
- (c) What do you mean by block . Give one example . [2]
- (d) State the difference between entry controlled loop and exit controlled loop. [2]

- (e) Write two advantages of using function in the program. And explain role of void in declaring functions ?

[2]

Question 3

- (a) What do you mean by function overloading? Explain with example.

[2]

- (b) What is this keyword ? Also discuss the significance of it .

[2]

- (c) Attempt the following :

- (i) State the two features of a constructor .

- (ii) Write a valid java program code to print the following array in matrix form with 2 rows and 2 columns .

```
int mat[][] = { {2, 6}, { 10, 20}};
```

[2]

[2]

- (iii) State the total size in bytes of the array a[4] of char data type and p[4] of float data type .

[2]

- (iv)

```
String abc = "helloR";  
StringBuffer str = new StringBuffer(abc);  
int num = str.capacity();
```

what will variable num stores the value ?

[2]

- (v)

```
StringBuffer s1 = new StringBuffer("Robot");  
String s2 = s1.reverse();  
System.out.println("s2 = " +s2);  
System.out.println("s1 = " +s1);
```

[2]

- (d) Write a java statement for finding and displaying the position of last space in string 'str' . [2]
- (e) Which one of the following returns the corresponding primitive data type object from string object ? [2]
i. Integer ii. readLine() iii. valueOf() iv. endsWith()
- (f) What do you mean by Abstraction and information hiding in java ? . [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 program to input three sides of a triangle (s1, s2 , s3). Using switch-case print whether a triangle is Equilateral , Isosceles , Right angled triangle or Scalene . The program should be used with menu and switch- case.

[15]

Question 5

Write a program to find the sum of the following series :

$$x + x^2/2! + x^3/3! + x^4/4! + \dots \dots \dots n \text{ terms}$$

[15]

Question 6

A number is said to be NEON number if sum of digits of square of a number is equal to the number itself.

Example : INPUT N = 9 , Output Square : 81 [where 8 + 1 = 9 so 9 is NEON number]

Write a program to find such numbers between 10 and 10000.

[15]

Question 7

Write a program to perform binary search on the list of 10 integers entered by user in ascending order to search for an element input by user , if its found display the element alongwith its position, else display the message " Search element not found".

[15]

Question 8

Write a program to accept a word and convert into lowercase if it is in uppercase and display the new word by replacing the VOWELS with the character following it.

[15]

Ex : Sample input : VOWEL

Sample output : vpwfl

Question 9

Write a program in java to print the following output :

1 * 2 * 3 * 4 * 5

[15]

1 * 2 * 3 * 4

1 * 2 * 3

1 * 2

1