

STD X

MAR THOMA RESIDENTIAL SCHOOL, TIRUVALLA
FIRST TERMINAL EXAMINATION-2019

COMPUTER APPLICATIONS

Marks:100
Time:2h

SECTION A (40 Marks)
Attempt all questions

Question 1.

- (a) Define abstraction. [2]
- (b) Differentiate between searching and sorting. [2]
- (c) Write a difference between the functions `isUpperCase()` and `toUpperCase()`. [2]
- (d) (i) `int res='A'*2`
What is the value of `res`? [2]
- (ii) Name the package that contains wrapper classes. [2]
- (e) State the difference between `while` and `do while` loop. [2]

Question 2.

- (a) Rewrite the following condition *without* using logical operators:
`if (a>b || a>c)`
`System.out.println(a);` [2]
- (b) Give the output of the following string functions:
(i) `"THIRUVANANTHAPURAM".replace('A', 'E')`
(ii) `"TRANSPARENT".compareToIgnoreCase("Transition")` [2]
- (c) Consider the following String array and give the output
`String arr[] = { "CHENNAI", "MUMBAI", "JAIPUR", "LUCKNOW", "AHMEDABAD" };`
`System.out.println(arr[0].length()>arr[3].length());`
`System.out.print(arr[4].substring(0,5));` [2]
- (d) Write down the difference between `==` and `equals()`. [2]
- (e) Name the two types of access specifiers. [2]

Question 3.

- (a) State the number of bytes and bits occupied by a character array of 10 elements. [2]
- (b) Differentiate between Binary Search and Linear Search techniques. [2]

This question paper consists of 4 printed pages

- (c) Write a java statement for each to perform the following task:
- (i) Find and display the position of the last space in a string str.
 - (ii) Extract the second character of the string str.

(d) Write a statement in Java for $\sqrt{\frac{a^2+b^2}{|a-b|}}$

(e) What is the value of m after evaluating the following expression?

`m -= 19%++m/2 + ++n*2;` when `int m=10, n=6`

(f) String `str="ACHIEVEMENT"`

What is the output of the following?

(i) `System.out.println(str.indexOf(str.charAt(8)));`

(ii) `System.out.println(str.substring(4,7).compareTo(str.substring(8))).`

(g) Differentiate between `break` and `System. exit(0)`

(h) Predict the output and also mention the number of times the loop runs.

```
int a=0;
while(a>= -5)
{ System.out.print(a+" ");
  System.out.print(- a*2);
  System.out.println();
  - a; }
```

(i) Write down the name of the function to do the following:

i) to check whether a character is a blank or not .

ii) String to primitive data type.

(j) Differentiate between `length` and `.length()`.

SECTION B (Attempt all questions)

Each program should be written using Variable descriptions/Mnemonic Codes so that the logic of the program is clearly depicted.

Question 4.

Design a class **RailwayTicket** with following description:

Instance variables/data members :

String name : To store the name of the customer

String coach : To store the type of coach customer wants to travel

long mobno : To store customer's mobile number

int amt : To store basic amount of ticket

int totalamt : To store the amount to be paid after updating the original amount

Member methods :

void accept () – To take input for name, coach, mobile number and amount.

void update() – To update the amount as per the coach selected

(extra amount to be added in the amount as follows)

Type of Coaches	Amount
First_AC	700
Second_AC	500
Third_AC	250
Sleeper	None

void display() – To display all details of a customer such as name, coach, total amount and mobile number.

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

Question 5

[15]

Write a java program to input names and their UID(UID is a 6 digit number) of N number of students in two single dimensional arrays and do the following.

- arrange the names in alphabetical order using bubble sort technique.
- Search for the name of a student input by the user in the list. If found display “Search Successful” and print the name of the student along with its UID using *binary search* technique. If the name is not present in the list display “Search Unsuccessful”

Question 6

[8]

Write a menu driven program to display the pattern as per user’s choice.

Pattern 1

ABCDE

ABCD

ABC

AB

A

Pattern 2

B

L L

U U U

E E E E

For an incorrect option, an appropriate error message should be displayed.

Question 7

i) Write a program in java to initialise a single dimensional array with the following names of states in India. Display only those names whose first letter matches with the letter entered by the user.

Assam, Haryana , Gujarat, Arunachal Pradesh, , Kerala, Karnataka, Andhra Parade

Enter the alphabet A

Output : Assam

Arunachal Pradesh,

Andhra Pradesh

ii) Write a program to input and store integer elements in a double dimensional array of size 4×4 and find

- a) The sum of all the elements of the array.
- b) Maximum and minimum elements.
- c) Display the array ,sum, minimum and maximum values .

12 4 5 6

9 2 8 3

10 11 20 13

15 17 7 14

SUM= 156

Maximum value 20

Minimum value 2
