

MAR THOMA RESIDENTIAL SCHOOL
FIRST TERM EXAMINATION 2018-2019

CLASS: XI

SUBJECT: COMPUTER SCIENCE

MARKS:70

TIME:3HRS

PART- I (20 Marks)

Answer *all* questions

Question 1

- a) What is a Byte code? (1)
- b) What is Coercion? Give an example. (1)
- c) Define Pure function. (1)
- d) What is Data abstraction? (1)
- e) Draw the truth table of A^B. (1)

Question 2

- a) Differentiate between Break and Continue statement with an example (2)
- b) Convert the following program code into equivalent do-while loop (2)

```
for(int i=10 ; i>=2 ; i - = 2)
System.out.println("count is="+ count);
```
- c) if int a=2, b=4; what will be the value of a after executing the following statement (2)
 $a*=a -- + -- b - b++ + ++a$
- d) Explain 'fall through' in java with an example. (2)
- e) Differentiate between Linear search and Binary search. (2)

Question 3

Give the output of the following (5)

- a) `System.out.println (Math rint(-23.15));`
- b) `System.out.println (Math.round(45.45));`
- c) `System.out.println (Math.floor(103.04));`
- d) `System.out.println (Math.abs(-27.43));`
- e) `int n=(int)(Math.random()*2); System.out.println (n);`

PART- II (50 MARKS)

Answer *six* questions in this part, choosing *two* questions from *Section A*,
two from *Section B* and *two* questions from *Section C*

SECTION -A

Answer *any two* questions

Question 4

a) Write a program in Java to accept a number and arrange the digits of the number in ascending order. (5)

Sample input : 5437

Sample output : 3,4,5,7

b) Write a note on parameterized constructor with an example. (3)

c) Give the output of the following expression: (2)

$a += a++ + ++a + --a + a--$ *∴ i/b a = 10*

Question 5

a) Write a java program to print the following series (5)

$S = 1 + a^2 - a^4 + a^6 - a^8 + \dots$ to n terms

b) Explain indexOf() function with examples. (3)

c) Differentiate between isLowerCase() and toLowerCase() methods. (2)

Question 6

a) Write a java program to print the following pattern (5)

```
C
CO
COM
COMP
COMPU
COMPUT
COMPUTE
COMPUTER
```

b) Define Inheritance. State the different types of Inheritance (3)

c) What is a static variable? (2)

SECTION B

Answer *any two* questions

Question 7

A class **Parellelogram** has been defined to calculate the perimeter and area of a Parellelogram (10)

The details are given below:

Class name : **Parellelogram**

Data members

double base : to store base of a Parellelogram

double side : to store side of a Parellelogram

double height : to store height of a Parellelogram

Member methods

void accept(): to accept values of data members from the user

double calculatePeri(): calculate and return the perimeter of a Parellelogram

double calulateArea(): calculate and return the area of a Parellelogram

void show() : to display the perimeter and area of the Parellelogram

Define main() to create an object of **Parellelogram** and call the member methods.

Area = base * height

Perimeter = 2(base + side)

Question 8

Write a java program to find the sum of outer elements of a 4 * 4 matrix. (10)

Question 9 (10)

Define a class **TaxiCharges** having the following description

Data members:

int taxino : to store taxi number

String name: to store passenger's name

int km : to store kilometres travelled

Member methods :

TaxiCharges()- non-parameterized constructor to initialize taxino to 0,name to "" and km to 0
input() -to accept taxino,name,km
double calculate()- to calculate and return the bill for a customer according to given conditions

Kilometers travelled	Rate/km
First 1 km	Rs 25
Next 5 kms	Rs 10.5
Next 10 kms	Rs 15.5
Next 7 kms	Rs 20.5
>23 kms	Rs 25.5

Display()- to display the details in the following format

TaxiNo	Name	Kilometers Travelled	Bill Amount
--------	------	----------------------	-------------

Create an object of the TaxiCharges in the main() method and call all the above member methods

SECTION C

Answer *any two* questions

Question 10

Write a program to generate the following pattern

(5)

```
5
5 4
5 4 3
5 4 3 2
5 4 3 2 1
```

Question 11

a)Distinguish between entry-controlled and exit-controlled loop with an example (4)

b)Convert the following into java statement

$$x = (a^2 * b^3) / (a/b)$$

(1)

Question 12

Answer the following questions given below

i)Write the syntax of **switch** statement

(1)

ii)Define mutator methods.

(1)

iii)What do you mean by primitive data type? Give examples

(1)

iv)What is a Run Time error? Give an example

(1)

v)What do you mean by 'scope of variables'?

(1)