ST. JOSEPH'S ACADEMY, DEHRADUN

2ND PRELIMINARY EXAMINATION 2022-23

SUBJECT: COMPUTER APPLICATIONS CLASS: X M.M.: 100 TIME: 2 HOURS

NAME OF THE STUDENT..... CLASS/SECTION ROLL NO...

THIS PAPER IS DIVIDED INTO TWO SECTIONS.

ATTEMPT ALL QUESTIONS FROM SECTION A AND ANY FOUR QUESTIONS FROM SECTION B.

SECTION-A
(ATTEMPT ALL QUESTIONS FROM THIS SECTION.)

Question 1. [20]

Choose the correct answer and write the correct option.

(i) By forming a class we achieve
- (a) Abstraction
- (b) Encapsulation
- (c) Inheritance
- (d) Polymorphism

(ii) The integer data type that reserves 32 bits of memory is:
- (a) double
- (b) float
- (c) char
- (d) short

(iii) Which of the following is not an operator:
- (a) (char)
- (b) +=
- (c) ||
- (d) ;

(iv) Which of the following is not a function of String class:
- (a) isUpperCase()
- (b) toUpperCase()
- (c) toLowerCase()
- (d) startsWith()

(v) Math.round(-3.899) will return:
- (a) -4.0
- (b) 4.0
- (c) 4
- (d) -3

(vi) The correct ternary statement for the following if statement is:

```
if (marks==100)
System.out.println("IIT");
else
 System.out.println("ITI");
```

- (a) marks==100?System.out.println("IIT"): System.out.println("ITI");
- (b) if(marks==100)?System.out.println("IIT"): System.out.println("ITI");
- (c) System.out.println(marks==100? "IIT":"ITI");
- (d) System.out.println(if(marks==100)? "IIT":"ITI");

(vii) Which of the following is not a correct name for if-else:
- (a) Branching statement
- (b) Conditional statement
- (c) Decision making statement
- (d) Multiple if statement

(viii) The number of bytes occupied by int[]arr=new int{1,10,100} would be :
(a) Three bytes
(b) Sixteen bytes
(c) Twelve bytes
(d) Twenty four bytes

(ix) for(int i=0;i<1000;i*=10)
{System.out.println(i);}
How many times this loop will execute?
(a 1 time
(b) 2 times
(c) 3 times
(d) infinite times

(x)
```
int i=2;
    while(i<10)
        {
          System.out.print(i++);
           ++i;
        }
```
Give the output of the above code:
(a) 1357
(b) 2345
(c) 2468
(d) 246

(xi) A variable declared as static in a class is:
(a) local variable
(b) global variable
(c) instance variable
(d) class variable

(xii) System.out.println("Z"+0); will result in:
(a) 0
(b) 90
(c) Z0
(d) Z

(xiii) Which of the following is a wrong statement:
(a) package SJA;
(b) import SJA;
(c) class SJA;
(d) int SJA;

(xiv) Which of the following does not exist in java:
(a) Character.toUpperCase()
(b) Character.toLowerCase()
(c) toUpperCase()
(d) isUpperCase()

(xv) The output of Integer.parseInt("45")+45 is
(a) "4545"
(b) 45+45
(c) 4545
(d) 90

(xvi) The process of converting int to double is called:
- (a) implicit conversion
- (b) explicit conversion
- (c) type casting
- (d) boxing

(xvii) The output of the method "little boy".substring(1,5) is:
- (a) ittl
- (b) ittle
- (c) litt
- (d) littl

(xviii) Another name for native executable code is:
- (a) object code
- (b) byte code
- (c) source code
- (d) JVM

(xix) Which of the following is a unary operator
- (a) *
- (b) &&
- (c) ++
- (d) ?:

(xx) Name the type of error that occurs for the following statement:
double a=Math.sqrt(-45);
- (a) syntax error
- (b) logical error
- (c) run time error
- (d) no error

Question 2.

(i) Evaluate the expression: [2]
a-=--a+a--+a--;
where a=3 initially

(ii) Write a java expression for: $\frac{-b+\sqrt{(b^2-4ac)}}{2a}$ [2]

(iii) Rewrite the following using if statement: [2]
```
switch(a)
 {
    case 1:  ++a;
             break;
    case 2: a=a+2;
             break;
  }
```

(iv) Rewrite the following using unicodes: [2]
if(Character.isLetter(ch)==true)

(v) How many times will the loop execute and what will be the output: [2]
```
char ch='a';
do
{
  System.out.println(a++);
}while(++a<68);
```

(vi) Give the output: [2]
"son".compareToIgnoreCase("jackson")

(vii) Give the output: [2]
Math.abs(-6-6)+Math.max(-6.0,-7.0)

(viii) There can be more than one constructor in the same class.
True or false? Give an example. [2]

(ix) Consider the following program and answer the questions that follow: [2]

```
public class ABC
{    int a=100;
     void calcu()
     {
       int a=200,q=20;
       System.out.println(a+b);
     }
```

(i) What type of function is calcu() ?
(ii) Give the output.

(x) Give one difference between double and Double. [2]

SECTION-B
(ATTEMPT ANY FOUR QUESTIONS)

Each program should be written using variable description/mnemonic codes so that the logic of the program is clearly depicted.
Flowcharts and algorithms are not required.

Question 3. [15]

Define a class with the following specifications:

class name	HHDFCBANK
member variables	name – to store the name of customer
	acno – to store the account number
	bal – to store the balance amount
	over – to store the overdraft limit amount

member methods

HHDFCBANK()	a default constructor
void deposit(int mone)	to add money to balance
void withdra(int with)	to withdraw money from account after checking for balance. The balance should not be less than Rs. 1000 after withdrawal. If it is, cancel the withdrawal and display a message " Insufficient balance".
void overdraft()	to set the overdraft limit to Rs. 30000.
void passbook()	to display all the details of the account.
void main()	create an object of the class and call all the functions one time each. No need to show a menu.

Question 4. [15]

Define a class to overload the method over as follows:

void over()- to print the format

```
1
01
010
1010
```

void over(int n) - to display each digit of n as many times as the digit is.

eg. n is 5462

output should be : 55555
4444
666666
22

Question 5. [15]

Define a class to store names and telephone numbers of 10 persons in two one dimensional arrays N[] and T[] respectively. Arrange the arrays in ascending order of names using Bubble Sort technique. Display both the arrays side by side along with a suitable heading.

Question 6. [15]

Define a class to store **n** number of **strings** in a single dimensional array A[]. Display all the strings in reverse order.

eg. if the array stores

Aarav
Anika
shourya

output should be : varaA
akinA
ayruohs

Question 7. [15]

Define a class to input a string and print as following:

(a) convert all the capital letters to small letters

(b) print the next letter of a small letter ie. b should be printed as c, y as z, z as a

(c) print the digit after subtracting it from 10 ie. '4' should be printed as 6.

(d) print the Unicode of each special character.

Question 8. [15]

Define a class to store m integers in A[]. Copy all the elements of A[] in reverse order in B[]. Display A[] and B[].

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