HALF YEARLY EXAMINATION : 2022-23

Class - IX

Time : 2 hrs. **Subject - Computer Application** M.M. : 100

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 to write the answers.

This paper is divided into TWO sections.
Answer ALL the questions in Section A and any FOUR questions from Section B.
The intended marks for questions or parts are given in [ ].

SECTION - A [40 MARKS]

Attempt ALL questions from this section.

Q.1- a. Differentiate between static and dynamic initialization with the help of example. [2]

b. Differentiate between break and System.exit(0). [2]

c. What is null loop? Give an example. [2]

d. What is the use of new and import keywords? [2]

e. Differentiate between syntax and logical error. [2]

Q.2- a. Differentiate between entry and exit controlled loop. [2]

b. Explain Math.round( ) function with the help of an example. [2]

c. Mention one similarity and one difference between while and do-while. [2]

d. Differentiate between nextFloat( ) and nextInt( ) functions. [2]

e. What are escape sequences? Mention any 2. [2]

Q.3- a. Give the output :

```
System.out.printIn(Math.sqrt(Math.abs(Math.max(-81,-64))));
```
[2]

b. Analyse the following snippet and determine how many times the body of the loop will be executed and what will be the output? [2]

```
int m = 2, n = 15;
for(int i = 1; i < 5; i++)
m++;
- -n;
System.out.printIn(m);
System.out.printIn(n);
```

c. Convert the following loop to corresponding for loop [2]

```
int m =5; n = 10;
while(n >= 1)
{
System.out.println(m * n);
n- - ;
}
```

d. What will be the value of b if a = 5? [2]

```
b = ++a + ++a +a- - + a++ * ++a;
```

e. Differentiate between compiler and interpreter. [2]

f. Rewrite the following code ternary operator. [2]

```
if(income < 10000)
tax = 0;
else
tax = 1200
```

g. Name the keyword that : [2]

i. skips the rest of the loop body and transfers the control to the beginning of the loop.

ii. is used to declare an integer variable.

h. Rewrite the following code using for loop:- [2]

```
int i = 1, f = 1;
do
```

```
{
f = f * i;
i++;
}while(i <= 10);
```

i. What is bytecode? Explain. [2]

j. Rewrite using switch case construct:- [2]

```
if(a == 1)
b += 10;
else if(a == 2)
b -= 10;
else
b *= a
System.out.println(b);
```

SECTION - B [60 MARKS]

Attempt any FOUR questions from this Section.

The answer in this section should consist of the programs either Blue J environment or any program environment with Java as the base.

Each program should be written using ***variable description/mnemonic*** codes such that the logic of the program is clearly depicted.

Flow charts and algorithms are not required.

Q.4- Write a program to input a number and check if it is a Palindrome number or not. A number is said to be palindrome if the new number obtained after reversing the digits is same as the original number. [15]

Sample Input : 161

Sample output : 161 is a palindrome number

Q.5- Write a menu driven program to [15]

- Display the first 20 terms of Fibonacci series
  (Fibonacci series :: 0,1,1,2,3,5 ... 20 terms)
- Input a number and display all the factors of it. (eg factors of 6 = 1, 2, 3, 6)

Q.6- Write two separate programs to display the sum of the following series

a. S = 1 + 3 + 5 + ... n terms [7]

b. S = 1/2! + 2/3! + 3/4! + ... 9/10! [8]

Q.7- Suman travels gives the following discount to its customers : [15]

Ticket amount	Discount
Upto ₹ 25000	2.5 %
Above ₹ 25000 to ₹ 35000	10 %
Above ₹ 35000 to ₹ 55000	12.5 %
Above ₹ 55000	15 %

Write a program to input the name of the customer and ticket amount. Compute the discount and the net amount to be paid by the customer. Display the name, ticket charge ,discount and net amount.

Net amount = Ticket amount - Discount

Q.8- Write separate programs to display the following patterns on the screen ::

a. [8]

```
1
2 3
4 5 6
7 8 9 10
```

b. [7]

```
* * * * *
* * * *
* * *
* *
*
```

Q.9- Write a program to input a number and print whether the number is a special number or not. [15]

A number is said to be special number if the sum of the factorial of the digits of the number is same as the original number.

Sample input : 145 is special number because 1! + 4! + 5! + = 1 + 24 + 120 = 145 where ! stands for factorial of the number. Factorial is the product of all integers from 1 to that number.

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