



Estd. 1861

BOYS' HIGH SCHOOL AND COLLEGE

SECOND TERM EXAMINATION (2023-24)

CLASS - IX

COMPUTER APPLICATION

Maximum Marks:100

Time allowed: Two hours

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:

Choose the correct answers to the questions from the given options.

[20]

(Do not copy the questions, write the correct answers only.)

- (i) Which statement is used to exit from switch case?
- | | |
|-------------|-----------------|
| a) continue | c) return |
| b) break | d) All of these |
- (ii) What is the output of
Math.max (-3.5,2.3) + Math.min(2.4,1.4)
- | | |
|--------|--------|
| a) 2.3 | c) 3.7 |
| b) 1.2 | d) 4 |
- (iii) Which of the following segment can be omitted in a for loop?
- | | |
|-------------------|----------------------|
| a) Initialization | c) Update expression |
| b) Test condition | d) All of these |
- (iv) Which operator can not be used with if-else statement?
- | | |
|-------|-------|
| a) <= | c) && |
| b) | d) ?: |
- (v) Consider the following program segment and select the output of the same when n=10
- ```
switch(n)
{ case 10: System.out.print(n*2);
 case 4: System.out.print(" "+n*4); break;
 default: System.out.print("Invalid choice");}
```
- |          |          |
|----------|----------|
| a) 20 40 | c) 40 20 |
| b) 10 4  | d) 10 10 |
- (vi) The Scanner class method used to accept words with space
- |               |                 |
|---------------|-----------------|
| a) next()     | c) Next()       |
| b) nextLine() | d) nextString() |
- (vii) How many times the loop will execute?
- ```
for(int i=45; i>=5;i=i-5)
{ System.out.println(i);}
```
- | | |
|------|------|
| a) 8 | c) 9 |
| b) 4 | d) 0 |
- (viii) The statement System.out.println("six"+3+3); gives the output
- | | |
|----------|---------|
| a) six33 | c) six6 |
| b) 33six | d) 6six |
- (ix) Which of the following converts the Java byte code into machine code?
- | | |
|--------|--------|
| a) JVM | c) MVJ |
| b) JMV | d) VIM |
- (x) Which keyword is used for accessing the features of a package?
- | | |
|------------|------------|
| a) package | c) extends |
| b) import | d) export |
- (xi) What will be the output of the following code segment?
- ```
double x=4.5, y=6.8;
double z= Math.floor(Math.max(x,y)) ;
System.out.println(z);
```
- |        |        |
|--------|--------|
| a) 6.0 | c) 7.0 |
| b) 6.9 | d) 7.5 |
- (xii) Which of the following is an exit-controlled loop?
- |          |                     |
|----------|---------------------|
| a) for   | c) do-while         |
| b) while | d) Both (a) and (b) |
- (xiii) What will be the output of the code?
- ```
int a=2; double b=2.6, c;
System.out.print(Math.pow (a, a) +b);
c=Math.min (a, b);
System.out.print(" "+c);
```
- | | |
|------------|------------|
| a) 6.6 2.0 | c) 6 2 |
| b) 6.6 2 | d) 7.0 2.0 |
- (xiv) Name the type of error that occurs for the following statement:

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```
System.out.println(Math.sqrt(36-45));
```

- a) Syntax error
b) Run time error
c) Logical error
d) No error
- (xv) What is the result stored in x, after evaluating the following expression?
int x=5;
x=x++ *2 +3 * --x;
- a) 22
b) 24
c) 25
d) 26
- (xvi) If break is not used with switch case, then
- a) It is Fall Through situation
b) It is a syntax error
c) It is an logical error
d) Normal flow of control
- (xvii) Which of the following class is required to use Mathematical method in BlueJ?
- a) System
b) InputStreamReader
c) Math
d) Scanner
- (xviii) Which loop construct guarantees that the loop body is executed at least once?
- a) for
b) while
c) do-while
d) none of these
- (xix) Ternary operator is a
- a) Logical operator
b) Relational operator
c) Arithmetic operator
d) Conditional operator
- (xx) Write the output:
int i;
for(i=0;i<10;i++)
{ break;}
System.out.println(i);
- a) 1
b) 0
c) 10
d) 9

Question 2:

(i) Evaluate the expression if the value of a=20, b=15 [2]
 $b+=a++ *2 / a++ + b$

(ii) Write Java expression for the following: [2]
 $A=\pi r^2+2\pi rh$

(iii) Give the output of the following program segment: [2]
int n=4279, d;
while(n>0)
{
 d=n%10;
 System.out.println(d);
 n=n/100;
}

(iv) What is the difference between Math.ceil() and Math.floor()? [2]

(v) Convert the for loop to while loop [2]
for(int m=3;m<=10;m=m+2)
{
 if(m==6)
 { System.out.println(m);
 }
}

(vi) Convert the following if else if construct into switch case [2]
if(var==1)
System.out.println("Good");
else if(var==2)
System.out.println("Better");
else if(var==3)
System.out.println("Best");
else
System.out.println("wrong value");

(vii) The following is a segment of a program [2]
int x=1, y=2;
if (n>0)
{
 x=x+1;
 y=y-1;
}

What will be the value of x and y, if n assumes a value (i) 1 and (ii) 0?

(viii) Explain with the help of an example, the purpose of default in a switch statement? [2]

(ix) Give the output : [2]

```

Math.sqrt(Math.max(9,16));
(x) What is wrong with the following code?
int i=5, j=19;
if((i<j) ||(j=10));
System.out.println("OK");
else
System.out.println(" NOT OK");

```

[2]

SECTION B

(Answer any FOUR questions from this section)

Each program should be written using variable description codes so that the logic of the program is clearly depicted. [15]

Question 1:

Using the switch statement, write a menu driven program to calculate the maturity amount of a bank deposit. The user is given the following options:

(i) Term Deposit (ii) Recurring Deposit

For option (i) accept principal (P), rate of interest (r) and time period in years(n). Calculate and output the maturity amount (A) receivable using the formula : $A = P (1 + r/100)^n$

For option (ii) accept Monthly Installment (P), rate of interest (r) and time period in months(n). Calculate and output the maturity amount (A) receivable using the formula

$$A = P * n + P * n(n+1)/2 * r/100 * 1/12$$

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

Question 2:

(a) Write a program to accept a number and check whether a number is a Palindrome or not. A palindrome number is a number that remains the same when its digits are reversed. For example: Input: 232 [8]

Output: 232 is a palindrome number.

(b) Write a program to accept a number and check whether a number is a Niven number or not. Any positive integer which is divisible by the sum of its digits is a Niven number. For example: 111 because $1+1+1=3$, and 111 is divisible by 3. [7]

$$111/(1+1+1)=37$$

Question 3:

Write a program to find the sum of a series:

(a) $(1*1) + (2*2) + (3*3) + \dots + (n*n)$ [7]

(b) $1/a + 1/a^2 + 1/a^3 + \dots + 1/a^n$ [8]

Accept values of n and a from user.

Question 4:

[15]

Define a class called Mobike with the following description:

Data member:

int bno – to store the bike's number.

int phno – to store the phone number of the customer.

String name – to store the name of the customer.

int days – to store the number of days the bike is taken on rent.

int charge – to calculate and store the rental charge.

Calculate the rent for a Mobike is charged on the following basis:

First five days: ₹ 500 per day

Next five days: ₹ 400 per day

Rest of the days: ₹200 per day

Display the details in the following format:

Bike No.	Phone No.	Name	No. of days	Charge
_____	_____	_____	_____	_____

Question 5:

[15]

Define a class named MovieMagic with the following description:

Data Members:

year- to store the year of release of a movie.

title- to store the title of the movie.

rating- to store the popularity rating of the movie.

(minimum rating=0.0 and maximum rating= 5.0)

[Declare the variables using appropriate data types]

Write a program to display the title of a movie and a message based on the rating as per the table below:

Rating	Flop
0.0 to 2.0	Flop
2.1 to 3.4	Semi hit
3.5 to 4.5	Hit
4.6 to 5.0	Super hit

Question 6:

[15]

Write a menu driven program to perform the following:(Use switch-case statement)

- (a) To print the series 1,3,7,15,31..... n terms
(value of 'n' is to be an input by the user)
- (b) To generate and print letters from A to Z and their Unicode.

Letters	Unicode
A	65
B	66
C	67
.	.
.	.
Z	90
