ARYA VIDYA MANDIR GROUP OF SCHOOLS

Std: X — **PRELIM REVIEW –January 2025**

Computer Appl
Date: 04.01.25 — **COMPUTER APPLICATION** — **Marks: 100**
Time : 2 Hrs

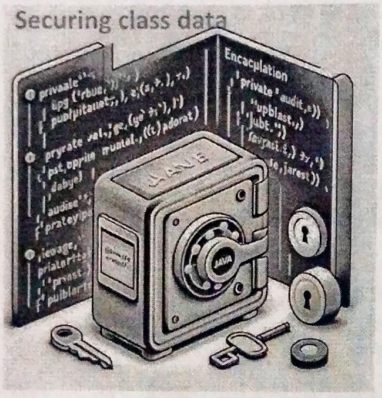
Note : You will NOT be allowed to write during the first 15 minutes.
This time is to be spent in reading the paper.
The time given at the head of this paper is the time for writing the answers.
The paper is divided into two sections. Answer all questions from section A and any 4 from section B. Section A is of 40 marks and section B is of 60 marks. Marks for each question is mentioned in[ ] to your right. This paper consists of 8 printed pages.

SECTION A (40 marks)
Answer all questions

Question 1

Choose the correct answer and write the correct option **[20]**

i.



Name the Java access specifier depicted in the above picture.

a) public
b) private
c) protected
d) default

ii. Unicode is a _____ bit character set

a) 8
b) 2
c) 16
d) 256

iii. Assertion (A): A loop in which there is no statement associated in its body is called as an infinite loop.
Reason(R) : In the infinite loop the test condition will always be true.

a) Both Assertion (A) and Reason (R) are true and Reason (R) is a correct explanation of Assertion (A)
b) Both Assertion (A) and Reason (R) are true and Reason (R) is not a correct explanation of Assertion(A)

...2

c) Assertion (A) is true and Reason (R) is false.
d) Assertion (A) is false and Reason (R) is true.

iv. If x = 9, find the value of
x* = (--x/x++) + ++x – (x--%x);
a) 18
b) 108
c) 90
d) 20

v. Given a string str="Publicaccess";
To display the 3rd and 4th characters in uppercase the statement will be :
a) System.out.println(str.substring(2,4).toUpperCase());
b) System.out.println(str.substring(2,3).toUpperCase());
c) System.out.println(str.substring(2).toUpperCase());
d) System.out.println(str.substring(2,3).touppercase());

vi. Assignment operator is _____ associative.
a) left
b) right
c) a and b both
d) none

vii. If you use the compareTo() function to compare two strings, and the first string is greater than the second one, the function will return _____.
a) a value that is greater than zero
b) a value that is less than zero
c) zero
d) equal

viii. What does the expression float a = (35-20) / (20-20) return?
a) 0
b) Not a number
c) infinity
d) run time error

ix. What is the output of the below java code?
int bat[] = { };
System.out.print(bat.length);
a) 0
b) -1
c) 1
d) Compiler error

x. An identifier is the name given to
a) Variable
b) Method

….3

c) Class
d) All of these

xi. State the output of the given code:

```
int i, n=1;
for(i =1; i>=5; i++)
n=n*i;
System.out.println(i+ "," + n);
```

a) 6,120
b) 1,1
c) Infinite loop
d) Compiler error

xii. What is the output

```
double d = 858.48
String s= String.valueOf(d);
    int dot = s.indexOf(' . ');
    System.out.println(s.length( ) + "\t" + dot);
```

a) 5 3
b) 6 2
c) 6 3
d) 5 2

xiii. Assertion (A): A logical operators can be used to join more than one relational expression.
Reason(R) : Logical operators are binary in nature.

a) Both Assertion (A) and Reason (R) are true and Reason (R) is a correct explanation of Assertion (A)
b) Both Assertion (A) and Reason (R) are true and Reason (R) is not a correct explanation of Assertion(A)
c) Assertion (A) is true and Reason (R) is false.
d) Assertion (A) is false and Reason (R) is true.

xiv. _____ is a composite datatype.

a) int
b) user defined data type
c) Arrays
d) Both b and c

xv. Variable which maintains independent copy of every object is:

a) instance
b) static
c) local
d) argument

xvi. Predict the output:

```
boolean f=true;
if(!f)
```

...4

```
System.out.println(f);
else
System.out.println(!f);
```

a) true
b) false
c) syntax error
d) None of these

xvii. What is the data type of the argument given in startsWith() method of String class?
a) int
b) boolean
c) String
d) No argument is provided

xviii. In object oriented programming, the stress is given on:
a) Procedure
b) Method
c) Class
d) Data

xix. Arrange the given literals on the basis of their size from lower to higher.
1. '\n'
2. true
3. 14.78f
4. 34
a) 1,2,4,3
b) 2,1,3,4
c) 2,1,4,3
d) 3,4,1,2

xx. Which of the following is the CORRECT statement to invoke the method with the prototype int display(int a, char ch)?
a) int m = display('A', 45);
b) int m = display(45,A);
c) int m = display(A,45);
d) int m = display(45,'A');

Question 2: **[20]**

i. What will be the output? [2]

```
 int a=12010;
int d;
while(a>0) {
d=a%100;
if(++d/3==0)
 break;
 else
 a=a/1000;
System.out.println(d); }
```

....5

ii. The following code segment should add the fifth and eight elements of the array and displays the answer as 56. However, the code has errors. Fix the code so that it compiles and runs correctly. Also name the error of the given code. [2]

```
int s[]={2,22,3,32,4,42,5,52};
if(s[3]%2==0)
 int sum=s[5]+s[7];
System.out.println(sum);
```

iii. Rewrite the following program segment using switch-case : [2]

```
char code;
if(code == 'B' || code == 'b')
System.out.println("Businessman");
if(code == 'F' || code == 'f')
System.out.println("Fighter");
if(code == 'E' || code == 'e')
System.out.println("Employee");
```

iv. Write the output of the given statements : [2]

```
"EXPRESSION".substring(0,3) ;
"EXPRESSION".substring(3);
```

v. Write a java statement to store marks of two students in 3 subjects in a double dimensional array [2]
Student1: 74,50,90
Student2: 65,89,69

vi. Write a Java statement for the given expression: [2]

$$\frac{\sqrt{|y|(a+b)^3}}{u}$$

vii. Cyber police wanted to investigate a case: they wanted to check a list of phone numbers that had 965 anywhere in the phone number. [2]
Example: 7396579383, 7682721965,... a method was created to convert the phone number in long data type to a string and check for the existence of the number 965.
Fill in the blanks (a) and (b) in the given method with appropriate Java statements:

```
void check (long pno)
{
String s= _____(a)_____;
if( _____(b)_____)
System.out.println(pno);
}
```

viii. Consider the array [2]

```
int n[]={12,35,40,22,56,9,70};
```

....6

If the above given array is arranged in descending order, how many iterations are required to check for the existence of value 12 using linear search? Also print the size of the array in bits?

ix. Name the following: [2]

a) Method that stops the execution of a java program at any stage.
b) At each stage, compares the sought key value with the key value of the middle element of the array.

x. Give output of the given code and convert and rewrite it using do - while loop [2]

```
String s= "Hope";
for(int i=0;i<5;i++)
{
if("AEIOUaeiou".indexOf(s.charAt(i))>=0)
System.out.print('$');
else
System.out.print(s.charAt(i));
}
```

Section B (60 marks)

Attempt any four questions from this section. Each program should be written in such a way that clearly depicts the logic of the program. This should be achieved by using mnemonic names and comments in the program. Also give description of variables.

Question 3: [15]

Define a class Grade_Revision having the following description:-
Instance Variables/Data Members:
String name - to store name of an employee
int bas - to store the basic salary
int expn - to store the years of service as experience
double inc - to store the increment
double nbas - to store the new basic salary (basic+increment)
Member Functions:
Constructor - to intilalize name, bas, expn to their default values.
void input ( ) - to accept input for name, bas and expn.
void compute ( ) - to calculate the increment with the followingspecifications.

Experience	Increment
Up to 3 years	1,000 + 10% of basic
More than 3 years and up to 5 years	3,000 + 12% of basic
More than 5 years and up to 10 years	5,000 + 15% of basic
More than 10 years	8,000 + 20% of basic

Finally calculate the new basic salary as basic + Increment.
void display ( ) – print all the details of an employee.
Write a main ( ) method to create an object and call the functions. ...7

Question 4: [15]

A student appearing for the ICSE or ISC examination will be given an index number.
Which is of the following format:

Number of 7 digits/number of 3 digits.
The first digit represents ICSE(1) or ISC(2), the next two digits represents the year, the next four digits represent the centre number, the last three digits represents the index number.

Example:
124311/204
Output:
Class: 10
Year :24
Centre number: 4311
Index number: 204

Example: 2259856/107
Output:
Class : 12
Year : 25
Centre number: 9856
Index number: 107

Define a class to accept the student index number as string and print his/her details as above.

Question 5: [15]

Define a class to overload a function Output( )

void Output(Sting, String)
accept two strings of same length and form a new word in such a way that,
the first character of the first word is followed by the first character of the second word and so on. If the strings are of different lengths print "Wrong Input"
Example :
Input string 1 – BALL
Input string 2 – WORD
OUTPUT : BWAOLRLD

void Output( )
get the output using nested loop
12345
23456
34567
45678
56789

...8

Question 6: [15]

A number is called an Adam number if the square of a number and the square of its reverse are reverse to each other.

Adam Number Example:

Consider a number (N) 12 and check it is an Adam number or not.
Square of the number (N) = 144
The reverse of the number (N) = 21
Square of the reverse of the number (N) = 441
We observe that the square of 12 and the square of its reverse i.e. 21 are reverse of each other. Hence, 12 is an Adam number.

Question 7: [15]

Write a program to create a matrix of n rows and m columns. Store characters in it.
Print the greatest character of each row based on their ASCII value.
Example:

n=3 and m=4
4 a 8 A
T + 3 $
h } G

Output:
1 row : a
2 row: T
3 row: }

Question 8: [15]

Write a program to accept the names of countries and their player names in two single dimensional arrays of string types.
Arrange the list in ascending order of country names. Using selection sort technique.

**********ALL THE BEST**********