**DE NOBILI SCHOOL KORADIH**

**SUMMER VACATION HOMEWORK(2025-26)**

**Class – 10 subject :- Computer Application**

**Question 1: Multiple choice questions:**

a. Which of the following is a characteristic of machine language?

A. Easy to write and debug B. Uses mnemonics

C. Consists of binary codes D. Platform- independent

b. Assembly language is also known as:

A. First-generation language B. Second-generation language

C. Third-generation language D. Fourth-generation language

### **c. Which of the following best defines data abstraction?**

A. Hiding data members using access specifiers  
B. Hiding internal implementation details and showing only functionality  
C. Binding data and functions together  
D. Reusing existing class features

### **d. Which concept allows the same function name to behave differently based on object or**

### **context?**

A. Abstraction B. Encapsulation C. Polymorphism D. Inheritance

### **e. What is a class in Java?**

A. A function that returns a value B. A blueprint for creating objects  
C. A method that belongs to an object D. A variable that stores data

### **f. What is an object in Java?**

A. A primitive data type B. A blueprint for a class  
C. An instance of a class D. A data type used in casting

### **g. Which of the following is an example of implicit type casting in Java?**

A. int x = (int) 3.14; B. double d = 10;  
C. float f = (float) 5.5; D. char c = (char) 100;

### **h. Which of the following is not a primitive data type in Java?**

A. int B. float  
C. String D. Boolean

**i. Assertion (A):** Java keywords cannot be used as identifiers.  
**Reason (R):** Keywords are reserved words that have a predefined meaning in the Java language.

**Options:**  
A. Both A and R are true, and R is the correct explanation of A.  
B. Both A and R are true, but R is not the correct explanation of A.  
C. A is true, but R is false.  
D. A is false, but R is true.

**j. Assertion (A):** The += operator in Java is a compound assignment operator.  
**Reason (R):** a += b; is functionally equivalent to a = a + b;.

**Options:**  
A. Both A and R are true, and R is the correct explanation of A.  
B. Both A and R are true, but R is not the correct explanation of A.  
C. A is true, but R is false.  
D. A is false, but R is true.

2. a. Comparison between three types of computer language (Muscle level language assembly language and high

level language )

b. Differentiate between POP and OOP.

c. Differentiate between **abstraction** and **encapsulation**

d. What are the different types of Java programming?

e. What are the different types of Java programming?

f. What do you mean by JVM?

g. What are the features of Java?

h. What are the advantages and disadvantages of Java?

i. Differentiate between class and object.

j. How characters are stored in memory?

k. What do you mean by escape sequence characters?

3. What will be the output of the following code fragment?

a. public class Test {

public static void main(String[] args) {

int a = 5;

System.out.println(a++ + ++a);

}}

b. public class Test {

public static void main(String[] args) {

for (int i = 3; i > 0; i--) {

System.out.print(i-- + " ");

} } }

c. public class Test {

public static void main(String[] args) {

int x = 10, y = 20;

int result = (x > y) ? x : (x == y ? 0 : y);

System.out.println(result);

} }

d. public class Test {

public static void main(String[] args) {

int a = 1;

a = a++ + ++a \* a--;

System.out.println(a);

} }

e. public class Test {

public static void main(String[] args) {

for (int i = 1; i <= 5; i++) {

System.out.print((i % 2 == 0) ? i \* 2 : i \* 3);

System.out.print(" ");

} } }

4. **Write a Java program to print the following series: (input n from keyboard)**

1. 0, 1, 1, 2, 3, 5, 8, 13... n (Fibonacci series)
2. 1, 2, 4, 7, 11, 16... n (Increasing differences: +1, +2, +3, +4...)
3. 2, 6, 12, 20, 30... n (Pattern: n × (n + 1))
4. 1, 4, 9, 16, 25... n (Perfect squares)
5. 1, 8, 27, 64, 125... n (Perfect cubes)
6. 1, 3, 6, 10, 15, 21...n (Triangular numbers: sum of first n natural numbers)
7. 1, -2, 3, -4, 5, -6, 7...n (Alternating signs)
8. 5, 10, 15, 20, 25, 30... n (Multiples of 5)
9. 1, 2, 6, 24, 120, 720... n (Factorial series)
10. 3, 6, 12, 24, 48, 96... n (Each term is double the previous one)

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*