General Instructions:
1) All questions carry equal marks.
2) Unless explicitly stated in the question, assume random names for the methods and classes.
3) Write a complete JAVA program including Scanner and import statements whenever necessary.
4) Use of electronic devices is strictly prohibited.

Q 1: Automatic type conversion is possible in which of the possible cases?

a. byte to int
b. int to long
c. long to int
d. short to int

Q 2: Evaluate the following Java expression, if x = 3, y = 5, and z = 10:

$$++z + y - y + z + x++$$

a. 25
b. 24
c. 23
d. 20

Q 3: What will be the output of the following program?

```java
public class Test {
    public static void main(String[] args) {
        int count = 1;
        while (count <= 15) {
System.out.println(count % 2 == 1 ? "****" : "+++++");
++count;
        } // end while
    }// end main
}
```

a. 15 times ***   c. 8 times *** & 7 times +++++
b. 15 times +++++ d. Both will print only once

Q 4: Find the value of A[1] after execution of the following program.

```java
int[] A = {0,2,4,1,3};
for(int i = 0; i < A.length; i++)
{
    A[i] = A[(A[i] + 3) % A.length];
}
```

a. 0
b. 1
c. 2
d. 3

Q 5: Where does the system stores parameters and local variables whenever a method is invoked?

a. Heap
b. Stack
c. Array
d. Tree

Q 6: What is the return type of constructor?

a. No return type
b. Class object
c. void
d. None of the above

Q 7: What will be the output of following Java code?

```java
import java.util.Scanner;
class ThisKeyword {
    int a = 4;
    int b = 1;
    void getSum(int a, int b) {
        System.out.println(this.a + this.b);
    }
}
public class Main {
    public static void main(String args[]) {
        ThisKeyword T = new ThisKeyword();
        T.getSum(3, 5);
    }
}
```

a. 5
b. 4
c. 9
d. 8

Q 8: The main method should be static for the reason

a. It can be accessed easily by class loader
b. It can be accessed by every method or variable without any hindrance
c. It can be executd without creating any instance of the class
d. None of the above

Q 9: what is the result of the following piece of code?

```java
class Person {
    public int number;
}
public class Test {
```

```java
public void doIt(int i, Person p) {
    i = 5;
    p.number = 8;
}
public static void main(String args[]) {
    int x = 0;
    Person p = new Person();
    new Test().doIt(x, p);
    System.out.println(x + " " + p.number);
}
```
}

a. 08   c.   50
b. 00   d.   58

Q 10: Determine the output

```java
public class Test {
    static int i = 5;
    public static void main(String... args) {
        System.out.print(i++);
        System.out.print(i);
        System.out.print(++i);
        System.out.print(++i+i++);
    }
}
```

a. 66616   c.   67616
b. 56716   d.   56616

Q 11: Which of the following methods can be used for testing the strings for equality?

a. isequals()   c.   isequal()
b. equals()   d.   equal()

Q 12: Which variables are created when an object is created with the use of the keyword 'new' and destroyed when the object is destroyed?

a. Local variables   c.   Instance variables
b. Class variables   d.   Static variables

Q 13: What will be the output of the following program?
```java
int a = 3, b=1;
if(a = b)
    System.out.println("a = "+ a);
```

a. a=1   c.   Compilation fails
b. a=3   d.   Code runs with no output

Q 14: How many times the statement "Hello World" will be printed?
```java
int a = 6, b = 12;
while(a<b){
    System.out.println("Hello World");
    a+=2;
    b-=2;
```

a. 1   c.   3
b. 2   d.   4

Q15: What is the error in this code?

```java
byte b;
for(b=0; b<10; b=b+1)
    System.out.println("Printing "+b);
```

a. Variable b cannot contain value 100 as it is beyond the range of byte
b. Statement b=b+1 requires typecasting to byte
c. b cannot contain value 50
d. No error in the code

Q 16. If an expression contains a double, an int, a float, and a long variable, then the whole expression will be promoted into which of these data types?

a. long   c. int
b. double   d. float

Q 17: What is the value assigned to the variable x?

```java
int i = 6, j = 6, x;
x = (i>j ? (i<j?++i:--i) : (i==j?2*j:j/2));
```

a. 6   c. 5
b. 3   d. 12

Q 18: Does the following Java code execute without any error? If yes, write the output. If no, correct the statement(s) causing the error(s) and then write the output. ASCII value of character 'A' is 65.

```java
class TypeC{
    public static void main(String arg[]){
        char x = 'A';
        x=x+5;
        System.out.println("Character x is: "+x);
    }
}
```

Q 19: Convert 63.75 to 32 bit single precision IEEE 754 binary floating point standard, from a base 10 decimal number.

Q 20: Write a JAVA program to accept a number from the user at the runtime and display whether the number is an Armstrong number or not. A number is an Armstrong number if it is equal to the sum of cube of its digits. For example, 153 is an Armstrong number because the sum of the cube of the digits $1^3 + 5^3 + 3^3$ is equal to 153 itself.