# INDIAN INSTITUTE OF TECHNOLOGY ROORKEE
# ROORKEE – 247 667

(Autumn Semester 2018 – 19)

**Fundamentals of Object Oriented Programming (CSN 103)** **Assignment 1**

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**1** Write a JAVA program to find the multiplication of given 4 numbers. Also find their geometric mean.

**2** Write a JAVA program which reads the value of the height and radius of the base of a cylinder and calculates the Volume of that cylinder.

**3** Given as input a floating (real) number of centimeters, print out the equivalent number of feet (integer) and inches (floating, 1 decimal), with the inches given to an accuracy of one decimal place.

Assume 2.54 centimeters per inch, and 12 inches per foot. If the input value is 333.3, the output format should be: 333.3 centimeters is 10 feet 11.2 inches.

**4** Given as input an integer number of seconds, print as output the equivalent time in hours, minutes and seconds. Recommended output format is something like 7322 seconds is equivalent to 2 hours 2 minutes 2 seconds.

**5** Write a JAVA program to multiply two numbers without using * operator.

**6** Write a JAVA program to find the roots of the quadratic equation and display a message that roots are equal or distinct or real or complex.

**7** Write a JAVA program to find whether given integer *n* is a power of 2 or not. Also write a separate/same program to generate a first 50 power of 2 numbers.

**8** Write a JAVA program to reverse a given number of 5 digits.

**9** Write a JAVA program find the median of n numbers given by user.

**10** Write a JAVA program to find the maximum of three numbers using ternary operator.

**11** Evaluate the following expressions

(i) $x = 2 \% 2 + 2 * 2 - 2 / 2;$

(ii) Given $a$=4, $b$=5 and $c$=6;

Find $((a < b) \| (b > c) \& \&(a > b) \| (!(a > c)))$

(iii) *i=8, j=5, x=0.005, y=-0.01*

Find $5 * ((i / 7) + (j * (i - 3)) \% (x + y - 2 + i))$

(iv) Given *x=10* find *y=--x * x--*

(v) *y=(t=6, 7*t+2)*

**12** Write a JAVA program which reads two numbers *x* and *y*, then find the GCD of *x* and *y*.

**13** Write a JAVA program to find the sum of integers between 50 and 100, which are divisible by 7.

**14** Write a JAVA program to find the factorial of number using (i) for loop (ii) while loop (iii) do loop

**15** Enlist the common utilities under import statements that you know in JAVA.