**National Public School, Koramangala**

**2021-22**

**Computer Science Assignment -1**

**Data Types, Operators, Expressions**

**Grade: 11**

1. Write a python script to evaluate the following : \*\*

If r=10.51, b=4

1. Absolute value of b-r
2. Largest integer not greater then b-r
3. The result of b<r
4. After a 20% discount and 6% tax, a guitar costs Rs. 5300. Write a Python script to calculate the original price of the guitar. *Note that tax is calculated on the original price of the guitar. \*\**
5. In many jurisdictions a small deposit is added to containers to encourage people to recycle them. In one particular jurisdiction, containers holding one litre or less have a $0.10 deposit, and containers holding more than one litre have a $0.25 deposit.

Write a Python script that reads the number of containers of each size from the user. The script should compute and display the refund that will be received for returning those containers. *Format the output so that it includes a dollar sign and displays exactly two decimal places.*

**Output format:**

**No. of containers of capacity <=1L:**

**No. of containers of capacity >1L:**

**Total refund:**

1. Write a Python script to accept the no. of revolutions an electric motor makes per minute from the user, calculate how many degrees it rotates in one second and display the result as per the given output format. \*\*

**Output format ---**

**No. of revolutions per minute –**

**Degrees rotated per second -**

1. Write a Python script to convert temperature in degree Celsius to degree Fahrenheit.

Use this program to do the following: If water boils at 100 degree C and freezes as 0 degree C, use the script to find out what is the boiling point and freezing point of water on the Fahrenheit scale.

T(°F) = T(°C) × 9/5 + 32 \*\*

1. Presume that a ladder is kept leaning against a wall. Let variables length and angle store   
   the length of the ladder and the angle that it forms with the ground as it leans against

the wall. Write a Python script to compute the height reached by the ladder on the

wall for the following values of length and angle: \*\*

a) 16 feet and 75 degrees

b) 20 feet and 0 degrees

c) 24 feet and 45 degrees

d) 24 feet and 80 degrees

1. Write a script to calculate in how many days a work will be completed by three persons A, B and C together. If A, B, C take x days, y days and z days respectively to do the job alone then the formula to calculate the number of days if they work together is xyz/(xy + yz + xz) days where x, y, and z are given as input to the program.
2. Write a script that asks the user to enter the number of guests to a party. Then generate as many dinner coupons using a ***single print statement*** and multiline strings.

Format of the dinner coupons: \*\*

Dinner Coupon

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Valid for 1 person

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