



## GEN BC JOSHI ARMY PUBLIC SCHOOL PITHORAGARH

### WINTER VACATION HOMEWORK (2022-23)

#### COMPUTER SCIENCE/AI

#### CLASS VI -

Make the following worksheet in Excel and write the following steps

- (i) the formula to calculate the Total Marks.
- (ii) Write the steps to create a column chart.
- (iii) Write Steps to save the worksheet

SNo.	NAME	CLASS	MATHS	SCIENCE	SST	TOTAL	AVERAGE	PERCENTAGE
1	AMIT	6	67	76	67			
2	ROHIT	6	76	77	67			
3	SHALU	7	56	67	87			
4	GUARAV	7	77	56	67			
5	GARVIT	8	67	54	67			
6	SAUMYA	8	87	65	67			

#### Class VII

Create web page with HTML code using following instruction

- a) Insert your school image at the top
- b) Insert a table to create your class time-table

## Class VIII

Write Python code to create the following form, copy the code in your class work Notebook and also draw the layout.

**ENTER YOUR DETAILS FOR CS EXAM**

NAME	<input style="width: 60%;" type="text"/>
CLASS	<input style="width: 60%;" type="text"/>
ATTENDENCE	<input checked="" type="radio"/> PRESENT <input type="radio"/> ABSENT
HOUSE	<input style="width: 60%;" type="text"/>
ADDRESS	<input style="width: 60%;" type="text"/>
HOBBIES	<input type="checkbox"/> DANCE <input type="checkbox"/> MUSIC <input type="checkbox"/> DRAWING <input type="checkbox"/> SPORTS

## Class IX – Artificial Intelligence

Create a mind map of the chapter Neural Networks, and learn the topics. The Book can be downloaded from the link given below.

[https://cbseacademic.nic.in/web\\_material/Curriculum21/publication/secondary/AI\\_Curriculum\\_Handbook%20Class%209.pdf](https://cbseacademic.nic.in/web_material/Curriculum21/publication/secondary/AI_Curriculum_Handbook%20Class%209.pdf)



**Winter Vacation Home  
Work**

**Computer Science and Informatics Practices  
Class XI**

<b>Day</b>	<b>Questions</b>
<b>Jan 1</b>	<ul style="list-style-type: none"><li>a) What are tokens?</li><li>b) Define Keywords, identifiers, datatypes, literals and variables</li><li>c) Write python program to declare variable of integer, float, complex, string and Boolean type and print their values.</li><li>d) Store two values in x and y and swap them</li></ul>
<b>Jan 2</b>	<ul style="list-style-type: none"><li>a) What are identifier naming rules in python.</li><li>b) How many datatype are their in python.</li><li>c) What are Arithmetic operators? Write all the Arithmetic operators with example.</li><li>d) Write a program to store three integer x,y and z. Print their sum.</li><li>e) Write a program to print the type (data type on the screen) of:<ul style="list-style-type: none"><li>a. "my text"</li><li>b. 15</li><li>c. 16.2</li><li>d. False</li></ul></li></ul>
<b>Jan 3</b>	<ul style="list-style-type: none"><li>a) What does int(), float(), str() , bool() function do. Explain with the help of example.</li><li>b) What is the use of input() function and what is its return value.</li><li>c) Write a program to add two values taken form user using input().</li><li>d) Write a program to calculate speed of a vehicle. Take distance and time from user.</li><li>e) Write a program to add two values.</li></ul>

<p><b>Jan 4</b></p>	<p>a) What are comparison operator? Write all the comparison operators with example.</p> <p>b) Write a program to calculate principal. Take time and rate from user.</p> <p>c) Find out the output of following line if the input is( 1500 1.4 3)s=input().split()  p=float(s[0])  t=float(s[1])  r=float(s[2])  print(f'{{(p*t*r)/100:.6f}}') # search the internet to understand f{{myvar :.6f }}.</p> <p>d) The current year is 2020. And it's your friends birthday. You know her name and theyear of her birth. You want to wish her and remind her of her current age.  Example: if input name is "Ria" and year is "1996" then output must be</p> <hr/> <p>Happy Birthday Ria! Your current age is 24</p>
<p><b>Jan 5</b></p>	<p>Revision</p>
<p><b>Jan 6</b></p>	<p>a) You are having a get together at your house and your mother asks you to distribute candies equally amongst all your cousins. You want to determine if the number of candies given by your mother can be equally distributed or not.  Note: no of candies and no of cousins must taken through user entry.  Print "YES" if you can equally distribute the candies and "NO" if you cannot.</p> <p>b) Your mother has sent you to the milkman with a cylindrical bottle. You have to pay the milkman the price for the bottle full of milk at a rate of ₹40 per litre of milk. You are given the radius (r) and the height (h) of the bottle in centimetres. You can assume the value of <math>\pi</math> as 3.14. (take h and r as user entry)  Formula for volume of cylinder:  <math>V = \pi r^2 h</math>  Also, 1 litre = 1000 cm<sup>3</sup>.</p> <p>c) Given a two-digit number n, print both the digits of the number. Example: if n= 34</p>

	<p>output must be: 3 and 4</p> <p>Hint: You can use str() and string index or any other way to do it</p> <p>d) Given a temperature t in Centigrade, convert it into Fahrenheit. Formula for conversion:  <math display="block">\text{Temp } (^{\circ}\text{F}) = (9t / 5) + 32</math></p>															
<p><b>Jan 7</b></p>	<p>a) What are logical operators? Write all the logical operator with the help of example.</p> <p>b) What are comment? How we can make comments in python.</p> <p>c) Differentiate between / , // and % operator with the help of python program.</p> <p>d) What is the use of id(), len() and type()?</p> <p>e) Given the temperature and humidity for the day, determine which category the day's weather falls into.  <b>Take t and h from user.</b></p> <table border="1" data-bbox="548 842 1284 1129"> <thead> <tr> <th>Temperature (<math>^{\circ}\text{C}</math>)</th> <th>Humidity (%)</th> <th>Weather</th> </tr> </thead> <tbody> <tr> <td><math>\geq 30</math></td> <td><math>\geq 90</math></td> <td>Hot and Humid</td> </tr> <tr> <td><math>\geq 30</math></td> <td><math>&lt; 90</math></td> <td>Hot</td> </tr> <tr> <td><math>&lt; 30</math></td> <td><math>\geq 90</math></td> <td>Cool and Humid</td> </tr> <tr> <td><math>&lt; 30</math></td> <td><math>&lt; 90</math></td> <td>Cool</td> </tr> </tbody> </table>	Temperature ( $^{\circ}\text{C}$ )	Humidity (%)	Weather	$\geq 30$	$\geq 90$	Hot and Humid	$\geq 30$	$< 90$	Hot	$< 30$	$\geq 90$	Cool and Humid	$< 30$	$< 90$	Cool
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$< 30$	$< 90$	Cool														
<p><b>Jan 8</b></p>	<p>a) It is the year 2020 and your father owns a restaurant. You have decided to spend time helping him out in the COVID-19 pandemic situation. You have been conducting temperature checks for all the workers and the delivery boys at the restaurant. A temperature above <math>98.6^{\circ}\text{F}</math> is considered high. Write python code to get the Name and temperature of the employee and print "rest at home" if temp.is high else print "How may I help you"</p> <p>b) Write a program to ask a year and print if the year is a leap year or not.</p> <p>c) Write a program to ask 3 numbers and print the greatest of three.</p> <p>d) Write a program to check whether a given number is positive or negative</p>															

<p><b>Jan 9</b></p>	<p>a) Write a program accept a coordinate point in a XY coordinate system and determine in which quadrant the coordinate point lies.</p> <p>b) Write a python program to find the eligibility of admission for a professional course based on the following criteria:  Eligibility Criteria :  Marks in Maths <math>\geq 65</math> and Marks in Phy <math>\geq 55</math> and Marks in Chem <math>\geq 50</math> and Total in all three subject <math>\geq 190</math> or Total in Maths and Physics <math>\geq 140</math></p> <p>.....-</p> <p>Input the marks obtained in  Physics :65 Input the marks obtained in Chemistry :51  Input the marks obtained in  Mathematics :72 Total marks of Maths, Physics and Chemistry : 188  Total marks of Maths and Physics :  137</p> <p>The candidate is not eligible. Expected  Output :  The candidate is not eligible for admission.</p> <p>c) Write a python program to read roll no, name and marks of three subjects and calculate the total, percentage and division.  Test Data :  Input the Roll Number of the student :784 Input the Name of the Student :James  Input the marks of Physics, Chemistry and Computer Application : 70 80 90</p> <p><i>Expected Output</i>  :Roll No : 784  Name of Student : James  Marks in Physics : 70</p>
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	<p>Marks in Chemistry : 80  Marks in Computer Application : 90  Total Marks = 240  Percentage = 80.00  Division = First</p> <p>d) Write a program in C to read any digit, display in the word.</p>
<b>Jan 10</b>	<p>a) What is a loop?  b) How many types of loop are there in Python? Give example of each.  c) Write a program to print numbers from 1 - 10 with each number printed in a separate line using both for and while loop.  d) Write a program to print the sum of the first 10 numbers (1-10) using both for and while loop.</p>
<b>Jan 11</b>	<p>a) Write a program in Python to read 10 numbers from keyboard and find their sum and average  b) Write a program in Python to display the cube of the number upto given an integer. Go to the editor  Test Data :  Input number of terms : 5  Expected Output :  Number is : 1 and cube of the 1 is :1  Number is : 2 and cube of the 2 is :8  Number is : 3 and cube of the 3 is :27  Number is : 4 and cube of the 4 is :64  Number is : 5 and cube of the 5 is :125  c) Write a program in Python to display the multiplication table of a given integer. Example:  15 X 1 = 15  ...  ...  15 X 10 = 150</p>

	d) Write a program in python to display the n terms of odd natural number and their sum. "n" must be taken from user.
<b>Jan 12</b>	<p>a) Write a python program to calculate the factorial of a given number. (ex factorial of 5 = 5x4x3x2x1=120)</p> <p>b) Write a program to print sum of individual digit in a number. Example if number is 153 then output must 1+5+3 = 9</p> <p>c) Write a program to generate the sequence: -5, 10,-15, 20, -25..... upto n, where n is an integer input by the user.</p> <p>d) What is an infinite loop? Give one example.</p>
<b>Jan 13</b>	<p>a) Write a program to print all the even digit in a number. Example if n=34678 then output must be 4,6,8</p> <p>b) Write a program to print if the "n" number entered by the user is Armstrong number or not.</p> <p>c) Write a python program to print Fibonacci series" first 20 elements. Some initial elements of a Fibonacci series are: 0 1 1 2 3 5 8.....</p> <p>d)</p>
<b>Jan 14</b>	<b>Revision</b>
<b>Jan 15</b>	<p>a) What is nested loop? Give example .</p> <p>b) Write a program to print factorial of all the number between 1 to 10.</p> <p>c) Write a program to print all the prime number between 1 to 100.</p>

<b>Jan 16</b>	<p>a) Differentiate between break and continue statements using examples.</p> <p>b) Write a program to input a number and check if the no is prime or not. Use break statement in the program.</p> <p>c) Write a program in C to print the Floyd's Triangle 1</p> <pre>01 101 0101 10101</pre> <p>d) Write programs using nested loops to produce the following pattern :A</p> <pre>A B A B C A B C D A B C D E A B C D E F</pre>
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<p><b>Jan 17</b></p>	<p>Find out the output</p>	
	<p>a.</p> <pre>a=110 while a &gt; 100:     print(a)     a -= 2</pre>	<p>b.</p> <pre>L=[] L1=[] L2=[] for i in range(1, 10):     L.append(i) for i in range(10,1,-2):     L1.append(i) print(L1) for i in range(len(L1)):     L2.append(L1[i]+L[i])     L2.append(len(L)-len(L1)) print(L2)</pre>
	<p>c.</p> <pre>str1 = 'Hello World!' for ch in str1:     print(ch,end = ' ') print(str1[::-1]) print(str1[0:4]) print(str1[-1:-1])</pre> <p>a) What is the difference between list and string?  b) What is the difference between index() and find().  c) Write example with output of following functions</p> <ol style="list-style-type: none"> <li>i) <code>endswith()</code></li> <li>ii) <code>strip()</code></li> <li>iii) <code>lstrip()</code></li> <li>iv) <code>count()</code></li> <li>v) <code>split()</code></li> </ol>	<p>d.</p> <pre>lst=[1,5,4] lst2=[1,4,6] lst3=list(lst) print(lst+lst2) lst.append(10) lst3.extend(lst2) print(lst) print(lst2) print(lst3)</pre>
<p><b>Jan 18</b></p>	<p>a) Given a number, you have to determine the square of that number.</p> <p><b>Input Format</b></p> <p>The first line indicating the number of test cases - T.  Next T lines will each contain a single number - ni.</p> <p><b>Output Format</b></p>	

T lines each indicating the square  $s_i$  of the number  $n_i$ .

**Sample Input**

3  
3  
25  
13

**Expected Output**

9  
625  
169

ExampleCode:

**case=int(input())**

**lst=[]**

**for i in range(case):**

**lst.append(int(input()))**

**for i in range(case):**

**print(lst[i]\*\*2)**

for C in [3,5,7,9]:

T = TXT[CNT]

TOTAL = float(T) + C

print(TOTAL)

CNT = 1

ii) for x in range(1,4):

for y in range(2,5):

if x \* y > 10:

break

print (x \* y)

Check if the above code is correct or not for the problem:

b) Find the output of the following program:

- c) Write a program to declare list of 10 numbers and print and count odd number in the list.
- d) Write a program to declare a list of 10 elements and print all the prime numbers in the list.
- e) Write a function to return the second largest number from a list of numbers.

**Jan  
19**

- a) What is the difference and similarity in List and Dictionary?
- b) What is the difference and similarity in Tuple and List?
- c) Write all the ways to declare dictionary.
- d) Find the output of following program

```
var = 7
while var > 0:
    print ('Current variable value: ', var)
    var = var -1
    if var == 3:
        break
    else:
        if var == 6:
            var = var -1
            continue
print ("Good bye!")
```

**Class : XII – 2022-23 (CS)**

1. Read the following chapters from text book:
  - a. Python  
Revision Tour – I
  - b. Python  
Revision Tour –
  - II c. User  
Defined  
Functions
  - d. Python Modules and Libraries
2. Complete the exercise and assignment questions of the above mentioned chapters from book.
3. Revise the theoretical concepts of programming
4. Prepare all chapters for Board Examination.
5. Read the Chapter Networking and Concepts, Stack and Queue which we will have revision after winter vacation.

Subject : Informatics

Practices

Class : XII – 2022-23

1. Read the following chapters from text book:
  - a. Python Revision Tour – I (Sequential, Decisional and Iterative Programming)
  - b. Python Revision Tour – II (Lists, Tuples and Dictionaries)
  - c. Numpy
  - d. Python Pandas – I and II

e. Database Management and SQL (Class XI Syllabus) + Joins and Functions

2. Complete the exercise and assignment questions of the above chapters from book

a. Revise the theoretical concepts of DataFrame and Series

3. Prepare all chapters for Board Examination

4. Read the Chapter Networking and Concepts.