**PSG COLLEGE OF TECHNOLOGY**

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**DEPARTMENT OF COMPUTER APPLICATIONS**

**PYTHON PROGRAMMING**

2. Given the following assignments:

i1 = 2

i2 = 5

i3 = -3

Evaluate each of the following Python expressions.

1. i1 \* i2 (b) i1 / i2 (c) i1 // i2 (d) i2 / i1 (e) i2 // i1 (f) i1\*\* i3

**output:**

i1 = 2

i2 = 5

i3 = -3

a = i1 \* i2

b = i1 / i2

c = i1 // i2

d = i2 / i1

e = i2 // i1

f = i1 \*\* i3

print("Answers -> ", a,b,c,d,e,f)

3. Given the following definition: b1, b2, b3, b4 = true, false, x == 3, y &lt; 3

Evaluate the following Boolean expressions:

i. not b4

ii. b1 and b2

iii. not b1 or b2 or b3

iv. b1 and b2 or b3

v. not b1 or not b2 or not b3

**output:**

b1 = True

b2 = False

b3 = True

b4 = False

a = not b4

b = b1 and b2

c = not b1 or b2 or b3

d = b1 and b2 or b3

e = not b1 or not b2 or not b3

print(a,b,c,d,e)

**4. Give the output of the following if num1 = 8, num2 = 6, num3 = 4**

num1 = 8

num2 = 6

num3 = 4

num1 += num2 + num2

print(num1)

num1 = num1 \*\* (num2 + num3)

print(num1)

num1 \*\*= num2+num3

print(num1)

print(4.00 / (2.0+2.0))

num1 = 2+9\*((3\*12)-8)/10

print(num1)

num1 = 24 // 4 //2

print(num1)

num1 = float(10)

print(num1)

#num1 = int('3.14') #ValueError: invalid literal for int() with base 10: '3.14'

num1 = int(3.14)

print(num1)

print("BYE" == "bye")

print(10 != 9 and 20 >= 20)

print(10 + 6 \* 2\*\*2 != 9//4 - 3 and 29 >= 29/9)

print(5%10+10 < 50 and 29 <= 29)

print((0 < 6) or (not(10==6)) and (10 < 0) )

**5. Express the value 0.0000000000000000000000000449 as a Python literal**

#Express the value 0.0000000000000000000000000449 as a Python literal

# TOTAL 26 ZEROS

print(4.49e-26)

print(f"{4.49e-26:.28f}")

**6. Express the value 56992341200000000000000000000000000000 as a Python**

**literal.**

#06 Express the value 56992341200000000000000000000000000000 as a Python literal.

print(5.69923412e37)

print(f"{5.69923412e+37:.0f}")

**7. Add a pair of parentheses to each expression so that it evaluates to True.**

**a) 0 == 1 == 2 b) 2 + 3 == 4 + 5 == 7 c) 1 &lt; -1 == 3 &gt; 4**

# a = 0 == 1 == 2

a = 0 == (1 == 2)

print(a)

#b = 2 + 3 == 4 + 5 == 7

b = 2 + (3 == 4) + 5 == 7

print(b)

#c =1 < -1 == 3 > 4

c = (1 < -1) == (3 > 4)

print(c)

**8. A dartboard of radius 10 and the wall it is hanging on are represented using the two-**

**dimensional coordinate system, with the board&#39;s center at coordinate (0, 0). Variables**

**x and y store the x- and y-coordinate of a dart hit. Write an expression using**

**variables x and y that evaluates to true if the dart hits (is within) the dartboard, and**

**evaluate the expression for these dart coordinates: (0,0) (10,10) (6,-6) (-7,8)**

radius = float(input("Enter radius : "))

x = int(input("Enter x coordinate : "))

y = int(input("Enter y coordinate : "))

if(x < radius and x > -radius) and (y < radius and y > -radius):

    print("It hit the DART!")

else:

    print("It NOT hit the dart")

**9. The school decided to replace the desks in three classrooms. Two students can sit**

**in each desk.. Given the number of students in each class, print the smallest possible**

**number of desks that can be purchased.**

**The program should read three integers: the number of students in each of the three**

**classes, a, b and c respectively.**

a = int(input("No of studnets in A : "))

b = int(input("No of studnets in B : "))

c = int(input("No of studnets in C : "))

total\_students = a + b + c

needed\_desk = round(total\_students / 2)

print("Total needed desk -> ", needed\_desk)

**10. N students take K apples and distribute them among each other evenly. The**

**remaining (the undivisible) part remains in the basket. How many apples will each**

**single student get? How many apples will remain in the basket?**

students = int(input("Enter number of students : "))

apples = int(input("Enter number of apples : "))

equal\_dis = apples // students

remainings = apples % students

print("Distributed for each -> ", equal\_dis)

print("Remaing apples -> ", remainings)

**11. Given an integer number, print its tens digit.**

**Input Output**

**1745 4**

num = int(input("Enter number : "))

if(num > 9 or num < -9):

    after\_removing\_last\_digit = num // 10

    last\_digit = after\_removing\_last\_digit % 10

    print("10s digit is", last\_digit)

else:

    print("Type minimum 2 digit numbers")

**12. Given a positive real number, print its fractional part.**

**Input Output**

**10.93 0.93**

num = float(input("Enter a float number : "))

real\_num = float(int(num))

round(num,3)

ans = round(num - real\_num,3)

print(ans)

**13. Given a positive real number, print its first digit to the right of the decimal point.**

**Input Output**

**10.9345 9**

num = float(input("Enter float real number : "))

decimal\_part = num - int(num)

first\_digit = decimal\_part \* 10

print("Frist digit of decimal -> ", int(first\_digit))

**14. Given the integer N - the number of minutes that is passed since midnight - how**

**many hours and minutes are displayed on the 24h digital clock?The program should**

**print two numbers: the number of hours (between 0 and 23) and the number of**

**minutes (between 0 and 59).For example, if N = 150, then 150 minutes have passed**

**since midnight - i.e. now is 2:30 am. So the program should print 2 30.**

N = int(input("Number of Minutes : "))

if(N < 1440):

    num\_of\_hrs = N // 60

    num\_of\_mins = N % 60

    print("Time is :", num\_of\_hrs ,num\_of\_mins)

else:

    print("Above 24HRS")

**15. Write a Python program that accepts an integer (n) and computes the value of**

**n+nn+nnn.**

n = int(input("Enter num : "))

print(n + (n\*\*2) + (n\*\*3))

times\_to\_run = int(input("How many times to run : ")) #5 - > n^1, n^2, n^3, n^4,n^5

start = 1

ans = 0

while(start <= times\_to\_run):

    ans += n\*\*start

    start += 1

print("Answer : ", ans)

**16. Write a Python program to solve (x + y) \* (x + y).**

**Input : x = 4, y = 3**

**Output : (4 + 3) ^ 2) = 49**

x = int(input("Enter x : "))

y = int (input("Enter Y : "))

ans = (x+y) \*\* 2

print(ans)

**17. Write a Python program to compute the distance between the points (x1, y1) and (x2,**

**y2)**x1 = int(input("Enter x1: "))

x2 = int(input("Enter x2: "))

y1 = int(input("Enter y1: "))

y2 = int(input("Enter y2: "))

distance = ((x2 - x1)\*\*2 + (y2 - y1)\*\*2)\*\*0.5

print("Distance between points:", distance)

**18. Write a program to swap two numbers.**

num1 = int(input("Enter num1 ; "))

num2 = int(input("Enter num2 : "))

print("Before swap -")

print("N1 : ",num1 , "N2 : ",num2)

num1,num2 = num2, num1

print("After swap -")

print("N1 : ",num1 , "N2 : ",num2)

'''

temp = num1

num1 = num2

num2 = temp

'''