

# BCSE101E - Computer Programming: Python

---

## Cycle Sheet I– Partial

**Q1** Write a problem analysis chart (PAC), flowchart and Algorithm to calculate the age of a housefly in seconds, given the number of days the housefly lived. **[CO1] [L1]**

For example, if a housefly lived for 21 days, then its approximate age in seconds is  $21 \times 24 \times 60 \times 60$  is 1814400.

Test Cases are

case=1 input=21 output=1814400	case=2 input:8 Output=691200	case=3 input=1 output=86400
--------------------------------------	------------------------------------	-----------------------------------

**Q2** Milk is collected for sales from nearest 'n' farms to the milk booth. Given the amount of milk from 'n' farms in liters and ml. Write a PAC chart, flowchart and algorithm to compute total quantity of milk in the booth. **[CO1] [L1]**

For example, if milk comes from 3 farms in quantities 2 liters 300 ml, 3 liters 700 ml and 4 liters 600 ml then the total quantity of milk in booth is 10 liters 600 ml.

Test Cases are

case=1 input= 2 2 300 3 600 output= 5 (in liters) 900 (in ml)	case=2 input= 3 1 100 2 200 3 300 output= 6 (in liters) 600 (in ml)	case=3 input= 2 1 600 1 600 output= 3 (in liters) 200 (in ml)
------------------------------------------------------------------------------	---------------------------------------------------------------------------------------	------------------------------------------------------------------------------

**Q3** Write a PAC Chart, flowchart and algorithm for converting the given two-digit number into its corresponding Roman numeral [**CO1**] [**L1**]

Test Cases are

case=1	case=2	case=3
input=10	input:8	input=9
output=X	Output=VIII	output=IX

**Q4** Write a PAC Chart, flowchart, Algorithm to input two complex numbers and add the same to produce the result. After producing the result, print the real part and imaginary part separately. [**CO1**] [**L1**]

Test Cases are

case=1	case=2	case=3
input= 10+10j	input= 10	input= 10j
20+20j	20+10j	1+1j
output= 30+30j	output= 30+10j	output= 1+11j
Real Part is 30	Real Part is 30	Real Part is 1
Imaginary Part is 30	Imaginary Part is 10	Imaginary Part is 11

**Q5** Write a PAC Chart, flowchart and Algorithm program to calculate the area of a triangle, given its three sides a, b, and c. [**CO1**] [**L1**]

Test Cases are

case=1	case=2	case=3
input=5 6 7	input=3 7 5	input=10 12 15
output=14.70	output=6.50	output=59.81

**More questions will be posted in next lab session – after that only Problem Set I need to be submitted in VTop.**