

SOFTWARE ENGINEERING ASSIGNMENT 02

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20K0183; Sec: B

Part a)

Independent Regions:-

Using graph in part (b)

$$\boxed{\text{Independent Regions} = \text{Cyclomatic complexity} = 4}$$

Using Edges & Nodes:-

$$CC = E - N + 2$$

$$\begin{aligned} \text{Using graph in part (b)} \\ &= 16 - 14 + 2 \end{aligned}$$

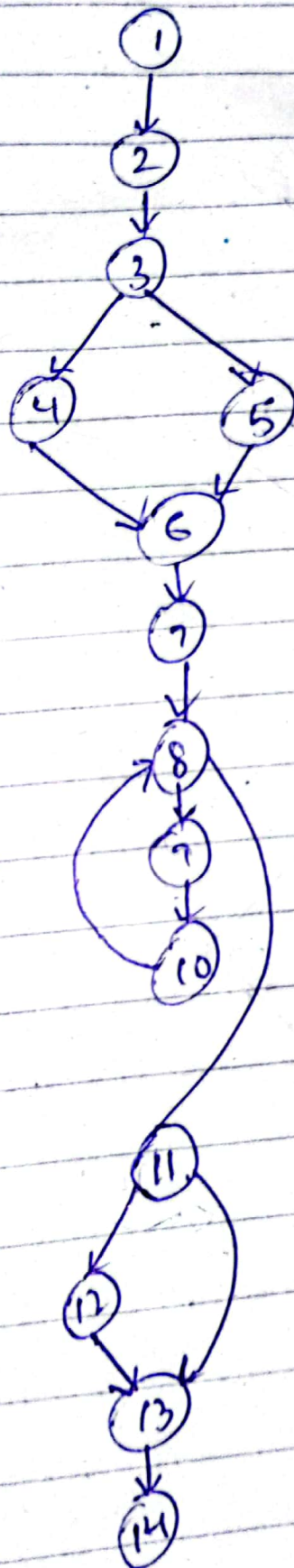
$$\boxed{\begin{array}{l} \text{Cyclomatic} = 4 \\ \text{complexity} \end{array}}$$

Using Predicate Nodes

$$CC = P + 1 \quad (\because P = 3)$$

$$\boxed{CC = 3 + 1}$$

Part b)



Independent Paths:-

1) $1 \rightarrow 2 \rightarrow 3 \rightarrow 5 \rightarrow 6 \rightarrow 7 \rightarrow 8 \rightarrow 11 \rightarrow 12 \rightarrow 13 \rightarrow 14$

2) $1 \rightarrow 2 \rightarrow 3 \rightarrow 4 \rightarrow 6 \rightarrow 7 \rightarrow 8 \rightarrow 11 \rightarrow 12 \rightarrow 13 \rightarrow 14$

3) $1 \rightarrow 2 \rightarrow 3 \rightarrow 4 \rightarrow 6 \rightarrow 7 \rightarrow 8 \rightarrow 9 \rightarrow 10 \rightarrow 8 \rightarrow 11 \rightarrow 13 \rightarrow 14$

4) $1 \rightarrow 2 \rightarrow 3 \rightarrow 4 \rightarrow 6 \rightarrow 7 \rightarrow 8 \rightarrow 9 \rightarrow 10 \rightarrow 8 \rightarrow 11 \rightarrow 12 \rightarrow 13 \rightarrow 14$

Part c) Test cases using equivalence partitioning

→ The value of x doesn't change & its unrestricted, therefore we can give any value to x

→ However ' y ' can be divided into 3 partitions >0 , $=0$ and <0 .

Inputs	Condition 3	Condition 8	Condition 11	Output
$x=2, y=4$	F	T	F	16
$x=2, y=0$	F	F	F	1
$x=2, y=-4$	T	T	T	0.0625