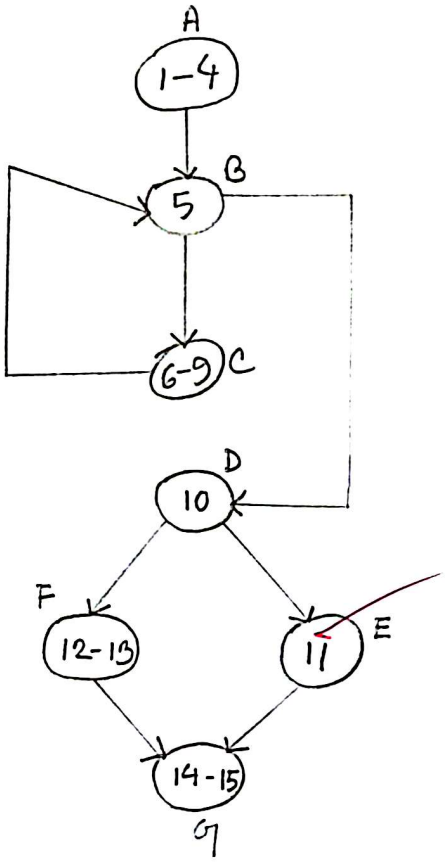
Ans to the question no: 01



Number of the decision nodes (while and if) : 02

Number of edges : 08

Number of nodes: 07

Number of connected component : 01

Now,

cyclomatic complexity : $E - N + 2P$

$\Rightarrow \{(8-7) + (2 \times 1)\}$

$\Rightarrow (1 + 2)$

$\Rightarrow 3$

The cyclomatic complexity of the graph is three (or) there will be three (03) independent paths in the graph.

As shown below of the paths :—

i) A → B → D → E → G

ii) A → B → C → D → E → G

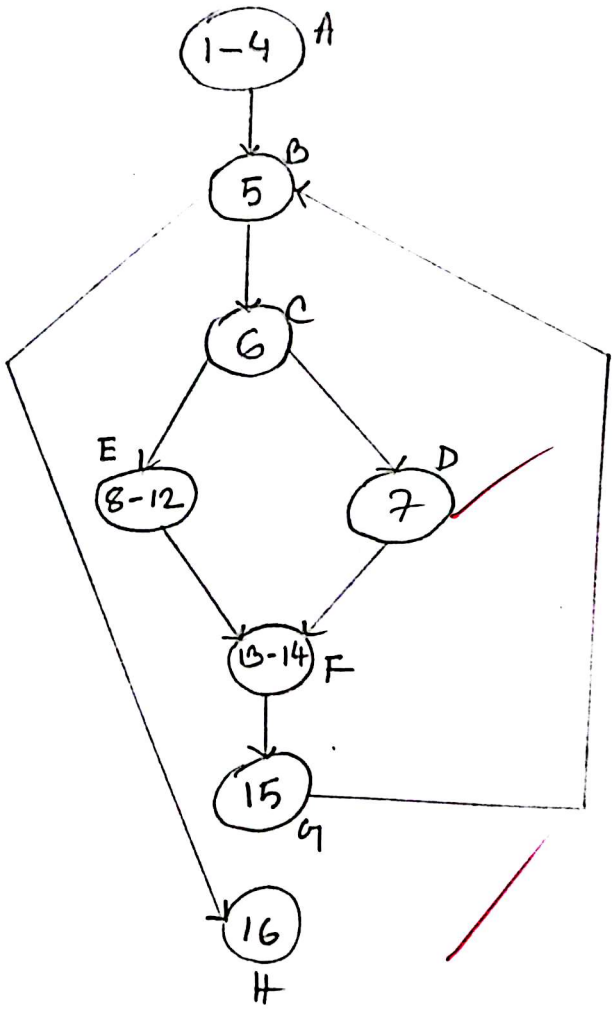
iii) A → B → C → D → F → G

Test case design from the independent paths:

Test ID	Input	Expected Result	Independent paths covered by test case
01	0	0 is a palindrome	A→B→D→E→G
02	1	1 is a palindrome	A→B→C→D→E→G
03	10	10 is not a palindrome	A→B→C→D→F→G

Ans

Ans to the question no: 02



Number of decision nodes (if) : 01
Number of edges : 09
Number of nodes : 08
Number of connected component : 01
Now;

Cyclomatic complexity : $E - N + 2P$

$\Rightarrow \{(9-8) + (2 \times 1)\}$

$\Rightarrow (1+2)$

$\Rightarrow 3$

The cyclomatic complexity of the graph is three(03) there will be three(03) independent paths in the graph.
As shown below of the paths :

i) A → B → H

ii) A → B → C → D → F → G → B → H

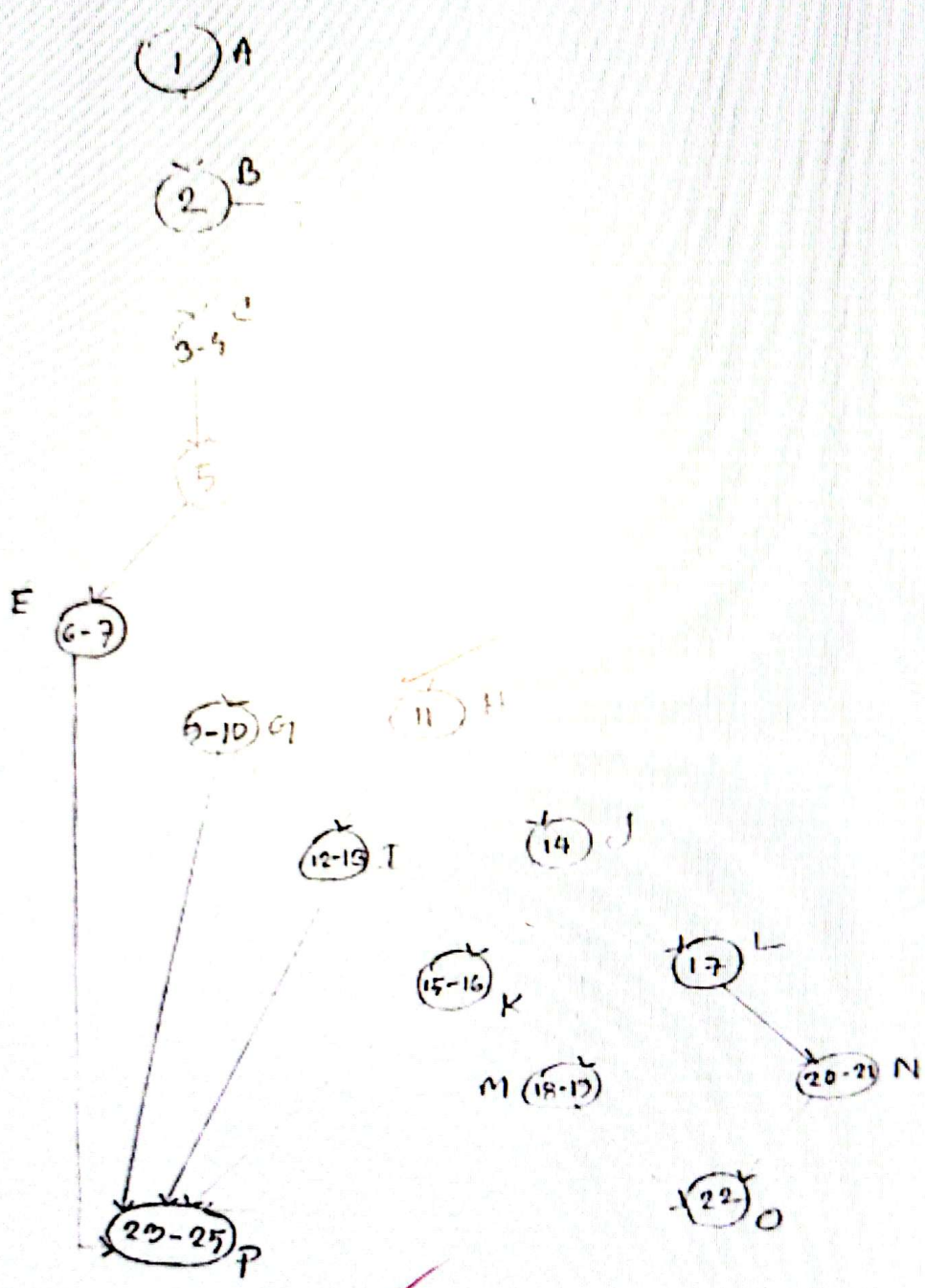
iii) A → B → C → E → F → G → B → H

Test case design from the independent paths :

Test ID	Input	Expected Result	Independent paths covered by test case
01	0	First 0 terms of Fibonacci series:	A → B → H
02	1	First 1 terms of Fibonacci series: 0	A → B → C → D → F → G → B → H
03	2	First 2 terms of Fibonacci series: 0 1	A → B → C → E → F → G → B → H

Ans

Ans to the question no: 03



Number of decision nodes (if-else) : 06

Number of edges : 21

Number of nodes : 16

Number of connected components : 01

Now;

cyclomatic complexity : $\{(21-16)+(2\times1)\}$

$\Rightarrow (5+2)$

$\Rightarrow 7$

The cyclomatic complexity of the graph is seven (07) there will be seven (07) independent paths in the graph.

As shown below of the paths:

I) A→B→C→D→E→P

II) A→B→D→F→G→P

III) A→B→D→E→P

IV) A→B→D→F→H→I→P

V) A→B→D→F→H→J→K→P

VI) A→B→D→F→H→J→L→M→O→P

VII) A→B→D→F→H→J→L→N→O→P

Test case design from the independent paths:

Test ID	Input nextday	amount	Expected Result	Independent paths covered by test case
01	Yes	1000	1799.5	A→B→C→D→E→P
02	NO	999	1151.3475	A→B→D→F→G→P
03	NO	1000	1785	A→B→D→E→P
04	NO	199	226.6779	A→B→D→F→H→I→P
05	NO	99	116.1275	A→B→D→F→H→J→K→P
06	NO	49	59.80275	A→B→D→F→H→J→L→M→O→P
07	NO	24	199	A→B→D→F→H→J→L→N→O→P

Ans