SECTION – 2 ANS-2

ANSWER-

$$f(n) = \begin{cases} \frac{n+1}{2}, & \text{if } n \text{ is odd} \\ \frac{n}{2}, & \text{if } n \text{ is even} \end{cases} \quad \text{for all } n \in N$$

$f: N \to N$ is defined as

It can be observed that:

$f(1) = \frac{1+1}{2} = 1$ and $f(2) = \frac{2}{2} = 1$

$\therefore f(1) = f(2)$, where $1 \neq 2$

$\therefore f$ is not one-one.

Consider a natural number (n) in co-domain N <u>case 1: n is odd</u>

$\therefore n = 2k+1$ for some $k \in N$.

Then, there exists $4k+1 \in N$ such that

$f(4k+1) = \frac{4k+1+1}{2} = 2k+1$

SECTION-2 ANS-2

Case II: n is even

$\therefore n = 2s$ for some $s \in N$.

Then, there exists $4s \in N$ such that

$$f(4s) = \frac{4s}{2} = 2s$$

$\therefore f$ is onto.

Hence, f is not bijective function
i.e. f is many one onto function.

Proved