$\because$we know that

$P(n) = M + R_1 + vR_2 + v^2R_3 + \cdots + v^{n-1}R_n - - - -(1)$

And here in the given problem, we have $M =$Rs.15000 and

$v = \frac{1}{1+0.10} = 0.909\,09$

$\therefore v^{n-1} = (0.909\,09)^{n-1}$

$\Longrightarrow$for $n = 1, v^{1-1} = (0.909\,09)^{1-1} = (0.909\,09)^0 = 1$

$\Longrightarrow$for $n = 2, v^{2-1} = v = (0.909\,09)^{2-1} = (0.909\,09)^1 = 0.909\,09$

$\Longrightarrow$for $n = 3, v^{3-1} = v^2 = (0.909\,09)^{3-1} = (0.909\,09)^2 = 0.826\,44$

$\Longrightarrow$for $n = 4, v^{4-1} = v^3 = (0.909\,09)^{4-1} = (0.909\,09)^3 = 0.751\,31$

$\vdots \qquad \vdots \qquad \vdots$

Now:

for $P(1)$, take sum of 2 terms in (1)

$\therefore P(1) = M + R_1 = 15000 + 2500 = 17\,500 \quad \because R_1 = 2500$ is given in table

or $P(2)$, take sum of 3 terms in (1)

$\therefore P(2) = M + R_1 + vR_2 = 15000 + 2500 + (0.909\,09)(3000)$

$= 20227 \ \because R_2 = 3000$ is given in table

or $P(3)$, take sum of 4 terms in (1)

$\therefore P(3) = M + R_1 + vR_2 + v^2R_3$

$= 15000 + 2500 + (0.909\,09)(3000) + (0.826\,44)(4000)$

$= 23533 \ \because R_3 = 4000$ is given in table

$\vdots \qquad \vdots \qquad \vdots$

From $P(n)\frac{(1-v)}{(1-v^n)}$,put $n = 1, 2, 3, \cdots$

$P(1)\frac{(1-v)}{(1-v^1)} = 17\,500\frac{(1-0.909\,09)}{(1-0.909\,09)} = 17500$

$P(2)\frac{(1-v)}{(1-v^2)} = 20227\frac{(1-0.909\,09)}{(1-0.909\,09^2)} = 10595$

$P(3)\frac{(1-v)}{(1-v^3)} = 23533\frac{(1-0.909\,09)}{(1-0.909\,09^3)} = 8602.\,7$

$\vdots \qquad \vdots \qquad \vdots$