

Calculate the NAP for the 5 years Endowment Policy

year	age	Number of insured person	Premium collected @Tk.1	PV of Tk 1 @ 5%	Present Value of the premium collected @ Tk. 1 per policyholder
1	30	9480	9480	1.00	9480
2	31	9355	9355	0.952	8906
3	32	9229	9229	0.907	8371
4	33	9101	9101	0.864	7863
5	34	8971	8971	0.823	7383
Total present value of the premium collected @ TK 1 per policy holder					42003

So, Net annual premium (NAP)

$$\begin{aligned}
 &= \frac{\text{Total PV of Claim (death + living)}}{\text{Total PV of Premium collected @Tk 1 Per policyholder}} \\
 &= \frac{5574880 + 69266400}{42003} \\
 &= \text{TK. 1781.81}
 \end{aligned}$$

Problem 4

BBA (Professional) 2010

Calculate the net single premium (NSP) and net annual premium (NAP) for 5 years term policy from the following information:

Age	No. of insured persons	No. of death	Present Value of Tk. 1 @5%
31	9480	125	0.952
32	9355	126	0.907
33	9229	128	0.864
34	9101	130	0.823
35	8971	136	0.784

** Policy value Tk. 10000.

Solution:

Calculate the NSP and NAP for the 5 years term policy

year	age	Number of insured person	Number of Death	Amount of claim	PV of Tk. 1@ 5%	Present Value of Death Claim /PV
1	31	9480	125	10000	0.952	1190000
2	32	9355	126	10000	0.907	1142820
3	33	9229	128	10000	0.864	1105920
4	34	9101	130	10000	0.823	1069900
5	35	8971	136	10000	0.784	1066240
Present value of Total death claim						5574880

$$\begin{aligned} \text{So Net single premium (NSP)} &= \frac{\text{Total PV of Death Claim}}{\text{Total no. of insured person}} \\ &= \frac{5574880}{9480} \\ &= 588 \text{ [Ans.]} \end{aligned}$$

Calculate the NAP for the 5 years term policy

year	age	Number of insured person	Premium collected @ Tk.1	PV of Tk 1@ 5%	Present Value of the premium collected@Tk.1 per policyholder
1	31	9480	9480	1.00	9480
2	32	9355	9355	0.952	8906
3	33	9229	9229	0.907	8371
4	34	9101	9101	0.864	7863
5	35	8971	8971	0.823	7383
Total present value of premium collected @ TK 1 per policy holder					42003

So,

$$\begin{aligned} \text{Net annual premium (NAP)} &= \frac{\text{Total PV of death claim}}{\text{Total PV of Premium collected @Tk 1 Per policyholder}} \\ &= \frac{5574880}{42003} \\ &= \text{TK. 133 [Ans.]} \end{aligned}$$