HW - Chapter 8 - Risk Analysis- Q4

(i)   **Calculation of probable Net Present Value (NPV)**

Year	Prob. = 0.2		Prob. = 0.7		Prob. = 0.1		Total		
	Cash flow	Probable cash flow	Cash flow	Probable cash flow	Cash flow	Probable cash flow	Cash flow	PVF @ 18%	PV
0	-	-	-	-	-	-	(90,00,000)	1.000	(90,00,000)
1-5	20,00,000	4,00,000	30,00,000	21,00,000	40,00,000	4,00,000	29,00,000	3.125	90,62,500
5	0	0	20,00,000	14,00,000	30,00,000	3,00,000	17,00,000	0.437	7,42,900
Net Present Value (NPV)									8,05,400

(ii)   Worst and Best case is the case where expected annual cash inflows are minimum and maximum respectively.

Calculation of Worst Case and Best Case NPV

Year	PVF@ 18%	Worst case		Best Case	
		Cash flows (Rs.)	PV of Cash flows	Cash flows (Rs.)	PV of Cash flows
0	1.000	(90,00,000)	(90,00,000)	(90,00,000)	(90,00,000)
1 - 5	3.125	20,00,000	62,50,000	40,00,000	1,25,00,000
5	0.437	0	0	30,00,000	13,11,000
NPV			(27,50,000)		48,11,000

Worst case NPV   = Rs. (27,50,000)
Best Case NPV   = Rs. 48,11,000

(iii)   If the cash flows are perfectly positively correlated over time, it means cash flow in the first year will be the cash flows in subsequent years. In the worst case, cash flow is Rs. 20,00,000 and its probability is 20%, thus, the probability of worst case is 20% or 0.2.