

(Q NO 8)

i)

pay back Period

Project A

year	cash flows	
0	150,000	
1	45,000	105
2	45,000	60
3	45,000	15
4	45,000	-30
5	45,000	
6	45,000	

$$\text{Project A pay back Period} = 3 + \frac{15}{45}$$

$$\text{A pay back Period} = 3.33 \text{ year}$$

Project B

year	Cash flow \$000	Pay back \$000
0	150	-
1	75	75
2	60	15
3	30	-15
4	30	
5	30	
6	30	

$$\text{pay back period} = 2 + \frac{15}{30}$$

Project B payback = 2.5  
period

(ii)

All values in \$000

$$\text{NPV} = ?$$

NPV = PV cash flow - PV of cost  
Project A outflow

$$\text{NPV}_A = \frac{45}{(1+10\%)} + \frac{45}{(1+10\%)^2} + \frac{45}{(1+10\%)^3} + \frac{45}{(1+10\%)^4} + \frac{45}{(1+10\%)^5} + \frac{45}{(1+10\%)^6} - 150$$



$$NPV_A = \$45.986 \text{ K}$$

Project b

$$NPV = \frac{75}{(1+10\%)^1} + \frac{60}{(1+10\%)^2} + \frac{30}{(1+10\%)^3} + \frac{30}{(1+10\%)^4} + \frac{30}{(1+10\%)^5} + \frac{30}{(1+10\%)^6} - 150$$

$$= 196.36 - 150$$

$$NPV_B = \$46.360$$

(iii)  
NPV with 9%

All values in \$ 000

$$= \frac{45 \left( 1 - \frac{1}{(1+9\%)^6} \right)}{9\%} - 150$$

$$= 201.866 - 150$$

$$NPV_A = \$51.866$$



## Project B

$$= \frac{75}{(1+9\%)^1} + \frac{60}{(1+9\%)^2} + \frac{30}{(1+9\%)^3} + \frac{30}{(1+9\%)^4} + \frac{30}{(1+9\%)^5} + \frac{30}{(1+9\%)^6}$$

$$- 150$$

$$= 201.112 - 150$$

$$\boxed{NPV_B = 51.112}$$

(iv)

### IRR

All values in \$000 and  $x$  is IRR

### IRRA

$$150 = \frac{45}{(1+x\%)^1} + \frac{45}{(1+x\%)^2} + \frac{45}{(1+x\%)^3} + \frac{45}{(1+x\%)^4}$$

$$\frac{45}{(1+x\%)^2} + \frac{45}{(1+x\%)^4}$$

$$\boxed{IRRA = 19.90\%}$$

### IRR<sub>B</sub>

$$150 = \frac{75}{(1+IRR\%)^1} + \frac{60}{(1+IRR\%)^2} + \frac{30}{(1+IRR\%)^3} + \frac{30}{(1+IRR\%)^4}$$

$$\frac{30}{(1+IRR\%)^3} + \frac{30}{(1+IRR\%)^4}$$

$$\boxed{IRR = 22.711\%}$$



# Rank

Rank	NPV <sub>10%</sub>	Payback Period	IRR
1	B	B	B
2	A	A	A

i) in term of NPV project B gives more cash flow as compare to A that's why project B NPV is higher than A

ii) in term of payback period. Project B pay all cash or cost in first 2 years but project A takes 3 years. so project B better

iii) in term of IRR project B has more capacity to give return as compare to A.

Q NO 5)



Mr. Abdullah for Tax  
year June 30, 2009

Income from		Rs 000
Income from Salary		
Basic salary		300
Dearness allowance		25
computer allow		30
Gov Medical	10	0
10% of basic salary	30	
Gras and dearness allowance		5
salary of watch on		36
Leave fare assist		45