



ISRA UNIVERSITY

Islamabad Campus

Department of Electrical Engineering

Program: B.E. (Electrical)

Semester - Fall 2015

HS-321 Engineering Economics & Management

Assignment – 3

Marks: 10

Due Date: 16/05/2016

Handout Date: 09/05/2016

Question # 1:

XYZ Ltd is a firm started by a family who put in their own finance of 1280,000. They also got a bank loan of 420,000 at an after tax cost of 9%. Equity cost are estimated at 17%. Calculate WACC.

$$K_D = 9\%$$

$$D = 420,000$$

$$E = 1280,000$$

$$K_E = 17\%$$

$$WACC = (K_D \times \frac{D}{E + D}) + (K_E \times \frac{E}{E + D})$$

$$WACC = (9\% \times \frac{420000}{1280000 + 420000}) + (17\% \times \frac{1280000}{1280000 + 420000})$$

$$\begin{aligned} WACC &= (9\% \times 0.247) + (15\% \times 0.753) \\ &= 0.02223 + 0.11295 \\ &= 0.135 = 13.5\% \end{aligned}$$

Question # 2:

XYZ Ltd designs and manufactures IT networking equipment and has debtor days of 30 days and creditor days of 60 days. The firm is considering its budgets and will produce a cash flow forecast for next year. The table below shows the expected timing of the transactions during the year. The assumptions that the company make are that wages are paid immediately; overheads and rent are paid after 60 days.

Thousands						Months						
Item	1	2	3	4	5	6	7	8	9	10	11	12
Sales	90	90	80	80	110	110	90	100	120	140	150	120
Wages	40	40	40	45	45	40	40	45	50	55	60	50
Materials	30	30	25	25	35	35	30	35	45	80	60	50
Overheads	11	11	11	11	11	11	12	12	14	14	14	14
Rent			30			30			35			35

Item	10	11	12
Sales	100	90	100
Wages	45	45	55
Materials	35	35	80
Overheads	10	10	10
Rent			30

Debtor days = 30

Creditor days = 60

Wages days = same

Overhead days = 60

Rent days = 60

Thousands	Months											
Item	1	2	3	4	5	6	7	8	9	10	11	12
Sales	100	90	90	80	80	110	110	90	100	120	140	150
Wages	40	40	40	45	45	40	40	45	50	55	60	50
Materials	35	80	30	30	25	25	35	35	30	35	45	80
Overheads	10	10	11	11	11	11	11	11	12	12	14	14
Rent		30			30			30			35	
Total Cash Out	85	160	81	86	111	76	86	121	92	102	154	144
Net Cash Flow	15	-70	9	-6	-31	34	24	-31	8	18	-14	6
Opening Balance	0	15	-55	-46	-52	-83	-49	-25	-56	-48	-30	-44
Closing Balance	15	-55	-46	-52	-83	-49	-25	-56	-48	-30	-44	-38