

**26<sup>TH</sup> COMPREHENSIVE EXAMINATION – AUGUST 2013****Marks****CASE # 1**

- (a) In order to discover the optimal replacement cycle, it will be necessary to first calculate the cash flows for each cycle and then to discount these cash flows at the company's cost of capital.

- **One Year Replacement Cycle:**

Rs. '000'

	End of June	2014	2015	2016	2017	2018	2019	
Cost of fleet		(1,650)	(1,815)	(1,995)	(2,195)	(2,415)	–	3
Resale value		1,050	1,050	1,050	1,050	1,050	1,050	
Operating revenue		1,250	1,375	1,515	1,665	1,830	2,015	1½
Operating and maintenance costs		(350)	(385)	(425)	(465)	(510)	(565)	
Cash inflow/(outflow) – net		300	225	145	55	(45)	2,500	
PV factor at 15%		1.000	0.870	0.756	0.658	0.572	0.497	
Net present values		300	195	110	35	(25)	1,245	3

The NPV is therefore, Rs. 1,860,000.

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- **Two Year Replacement Cycle:**

Rs. '000'

	End of June	2014	2015	2016	2017	2018	2019	
Cost of fleet		–	(1,815)	–	(2,195)	–	–	2
Resale value		–	600	–	600	–	600	
Operating revenue		1,250	1,375	1,515	1,665	1,830	2,015	
Operating and maintenance costs		(350)	(550)	(425)	(665)	(510)	(805)	
Cash inflow/(outflow) – net		900	(390)	1,090	(595)	1,320	1,810	
PV factor at 15%		1.000	0.870	0.756	0.658	0.572	0.497	
Net present values		900	(340)	825	(390)	755	900	1

The NPV is therefore, Rs. 2,650,000.

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- **Three Year Replacement Cycle:**

Rs. '000'

	End of June	2014	2015	2016	2017	2018	2019	
Cost of fleet		–	–	(1,995)	–	–	–	1
Resale value		–	–	75	–	–	75	
Operating revenue		1,250	1,375	1,515	1,665	1,830	2,015	
Operating and maintenance costs		(350)	(550)	(970)	(465)	(730)	(1,290)	
Cash inflow/(outflow) – net		900	825	(1,375)	1,200	1,100	800	
PV factor at 15%		1.000	0.870	0.756	0.658	0.572	0.497	
Net present values		900	720	(1,040)	790	630	400	1

The NPV is therefore, Rs. 2,400,000.

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A two year replacement cycle will give the largest net present value. The optimal replacement policy for the company is therefore, to replace its existing fleet after every two (2) years.

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**26<sup>TH</sup> COMPREHENSIVE EXAMINATION – AUGUST 2013**


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**Marks****Working Notes:**

- (1) Cost of fleet at the end of June 2014 = 110% x Rs. 1,500,000

This figure should be increased by 10% for each subsequent year. As the period under consideration runs for six (6) years. Any cost of replacement at the end of June 2019 is irrelevant and should be taken as zero for all replacement cycles.

- (2) Operating revenue at end of June 2014 is Rs. 1,250,000.

This figure increases by 10% for each subsequent year.

- (3) Resale Value of Fleet:

Replacement cycle:	Resale Value	Rs. '000'	
One year	3 cars x Rs. 350,000	1,050	1½
Two years	3 cars x Rs. 200,000	600	1½
Three years	3 cars x Rs. 25,000	75	1

- (4) Operating and Maintenance Costs:

Rs. '000'

End of Year	Replacement Cycle						
	One Year		Two Years		Three Years		
2014		350		350		350	
2015	350 x 1.1	385	500 x 1.1	550	500 x 1.1	550	
2016	350 x (1.1) <sup>2</sup>	425	350 x (1.1) <sup>2</sup>	425	800 x (1.1) <sup>2</sup>	970	
2017	350 x (1.1) <sup>3</sup>	465	500 x (1.1) <sup>3</sup>	665	350 x (1.1) <sup>3</sup>	465	
2018	350 x (1.1) <sup>4</sup>	510	350 x (1.1) <sup>4</sup>	510	500 x (1.1) <sup>4</sup>	730	
2019	350 x (1.1) <sup>5</sup>	565	500 x (1.1) <sup>5</sup>	805	800 x (1.1) <sup>5</sup>	1,290	
		3	+	3	+	3	= 9

**DISCLAIMER:**

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**26<sup>TH</sup> COMPREHENSIVE EXAMINATION – AUGUST 2013****Marks****CASE # 2****(a)**

HiTech  
Revised Operating Budget  
for the fourth quarter of 2013

	Rupees	
Revenue:		
Consulting fees:		
Computer system consulting	4,781,250	1
Management consulting	4,680,000	1
Total consulting fees	9,461,250	1
Other revenue	100,000	
Total revenue	9,561,250	1
Expenses:		
Consultant salary expenses*	5,106,500	1
Travel and related expenses	578,750	1
General and administrative expenses	930,000	1
Depreciation expense	400,000	1
Allocated expenses	750,000	1
Total expenses	7,765,250	1
Operating income	1,796,000	1

\* Rs.5,106,500 = Rs.2,450,000 + Rs.2,650,000

**Workings:**

W-1: Schedule of Projected Revenues for the Fourth Quarter of 2013:

	Rupees		
	Computer System Consulting	Management Consulting	
Third quarter:			
Revenue	4,218,750	3,150,000	
Hourly billing rate	750	900	
Billable hours	5,625	3,500	1 + 1
No. of consultants	15	10	
Hours per consultant	375	350	1 + 1
Fourth quarter planned increase	50	50	
Billable hours per consultant	425	400	1 + 1
No. of consultants	15	13	
Billable hours	6,375	5,200	1 + 1
Billing rate	750	900	
Projected revenue	4,781,250	4,680,000	1

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W-2: Schedule of Projected Salaries, Travel, General and Administrative, and Allocated Expenses:

	Rupees		
	Computer System Consulting	Management Consulting	
Compensation:			
Existing consultants:			
Annual salary	460,000	500,000	
Quarterly salary	115,000	125,000	
Planned increase (10%)	11,500	12,500	
Total fourth quarter salary per consultant	126,500	137,500	1
No. of consultants	15	10	
Total	1,897,500	1,375,000	1
New consultants at old salary (3 x Rs.125,000)	–	375,000	½
Total salary	1,897,500	1,750,000	
Benefits (40%)	759,000	700,000	1
Total compensation	<b>2,656,500</b>	<b>2,450,000</b>	
Travelling expenses:			
Computer system consultants (425 hours x 15)		6,375	
Management consultants (400 hours x 13)		5,200	
Total hours		11,575	1
Rate per hour*		50	
Total travelling expenses		<b>578,750</b>	
General and administrative expense (Rs.1,000,000 x 93%)		<b>930,000</b>	½
Allocation of expense (Rs.500,000 x 150%)		<b>750,000</b>	½

\* Third quarter travel expense ÷ hours = rate

$$\text{Rs. } 456,250 \div 9,125^{**} = \text{Rs. } 50.00$$

$$9,125^{**} = (350 \times 10) + (375 \times 15)$$

½

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(b) Reasons for Preparing a Revised Operating Budget:

An organization would prepare a revised operating budget when the assumptions underlying the original budget are no longer valid. The assumptions may involve factors outside or inside the company. Changes in assumptions involving external factors may include changes in demand for the company's product or services, changes in the cost of various inputs to the company, or changes in the economic or political environment in which the company operates. Changes in assumptions involving internal factors may include changes in company goals or objectives.

3

**THE END**