Answer no. 1:

1.) Present value of Minimum Lease Payments

Present value = (Cash flow*Annuity Factor) + (Discount Factor* Guaranteed residual value)
= (50,000*2.49) + (10,000*0.75)
= 131,842

*Annuity Factor=$1-(1+i)^n / i$
$=1-(1+0.1)^{-3} / 0.1$

=2.4869

2.)Repayment Schedule:

Years	Installment Rs.	Interest Rs.	Principal Rs.	Balance Rs.
1/1/05				131,842
31/12/05	50,000	13,184	36,186	95,026
31/12/06	50,000	9,503	40,497	54,529
31/12/07	50,000	5,453	44,529	10,000

3.)

Leased Liability a/c

	Rs.		Rs.
Bank (31/12/05)	36,816	Leased Asset (1/1/05)	131,842
c/d	95,026		
	131,842		131,842
		b/f (1/1/06)	95,026
Bank	40,497		
c/d	54,529		
	95,026		95,026
		b/f	54,529
Bank	44,529		
Bank	9,000		
Asset	1,000		
	54,529		54,529

Leased Asset a/c

	Rs.		Rs.
Leased liability (1/1/5)	131,842	c/d	131,842
	131,842		131,842
b/f (1/1/06)	131,842	c/d	131,842
	131,842		131,842

b/f	131,842	Accumulated Depr	130,842
		Leased Liab	1,000
	131,842		131,842

Accumulated Depreciation a/c

	Rs.		Rs.
		Depreciation	43,614
c/d	43,614		
	43,614		43,614
		b/f (1/1/06)	43,614
c/d	43,614		
	43,614		43,614
		b/f	43,614
c/d	87,228	Depreciation	43,614
	87,228		87,228
		b/f	87,228
Leased Asset	130,842	Depreciation	43,614
	130,842		130,842

Interest a/c

	Rs.		Rs.
Bank (31/12/05)	13,184	P & L	13,184
	13,184		13,184
Bank (31/12/06)	9,503	P & L	9,503
	9,503		9,503
Bank	5,471	P & L	5,471
	5,471		5,471

Answer no. 2:

1.)Present value of Minimum Lease Payments

Minimum Lease Rentals=Rs.52,000-Rs.2000
=Rs.50,000

It is noteworthy that since the lessor pays Rs.2,000 a year for insurance, this payment is treated as executory costs and hence excluded from the calculation of the present value of annual payments.

P.V of MLP = 50,000 + (1.735*50,000) + (10,000*Discount Factor (D.F))
= 50,000 + 86,775 +10,000 x $(1+0.1)^{-3}$
= 144,290

Annuity Factor (used in the above calculation) $=1-(1+i)^{-n} / i$

$= 1-(1.1)^{-2} / 0.1$

$=1.7355$

2.) Calculation of the Interest Rate by Trial and Error Method

Let rate of interest = 15%

PV of MLP's @ 15%= 50,000 + (Annuity Factor*50,000) + (D.F*10,000)

= 50,000 + (1.625*50,000) + (0.65*10,000)

=137,860

Difference=Rs.140,000-Rs.137,860

=Rs.2,140

Rate = $R_1 + \frac{NPV_1}{NPV_1 - NPV_2}(R_2 - R_1)$

= 10 + 4290/(4290+2140)*5

= 13.335%

3.) Repayment Schedule:

4.)

The Leased Obligation is recorded at the lower of the FV or the PV of MLP's. In this case FV is lower.

Date	Installments	Interest	Principle	Balance at the end of period
1/1/05				140,000
1/1/05	50,000	0	50,000	90,000
1/1/06	50,000	12,000	38,000	52,000
1/1/07	50,000	6,934	43,066	8,934
31/12/08	10,000	1,066	8,934	-

4.)

Interest Expense a/c

'05	Rs.	'05	Rs.
Interest Payable a/c	12,000	P & L	12,000
	12,000		12,000
'06		'06	
Interest Payable	6,934	P & L	6,934
	6,934		6,934

'07		'07	
Lease Liability	1,066	P & L	1,066
	1,066		1,066

Leased Liability a/c

	Rs.		Rs.
1/1/05		1/1/05	
Bank	50,000	Leased Asset	140,000
c/d	90,000		
	140,000		140,000
		1/1/06	
1/1/06		b/d	90,000
Bank	38,000		
c/d	52,000		
	90,000		90,000
		1/1/07	
1/1/07		b/d	52,000
Bank	43,066	Interest Expense	1,066
Bank(for the bargain purchase option)	10,000		
	53,066		53,066

Answer no. 3:

(a) The first step is to calculate the annual payment due to the lessor.

PV of MLP's=Net Selling price – PV of the residual value

Or in this case,
Rs.150,000- (0.40388*x10,000) = 4.96764**x MLP
Rs.145,961.20 / 4.96764 = MLP
Rs.29,382.40 = MLP
*0.40388 is the present value of an amount of Re.1 due in 8 periods at a 12% interest rate
** 4.96764 is the present value of an annuity of Re.1 for 8 periods at a 12% interest rate

(b) The lease classification

In this example the lease term is 8 yrs while the estimated useful life of the asset is 10yrs.Thus this lease qualifies as something other than an operating lease.(Note that it also meets the FMV versus PV criterion because the PV of the MLP's of Rs.145,961.20, which is 97% of the FMV=Rs.150,000, could be considered to be equal to substantially all of the fair value of the leased asset.) Now it can be any of the three categories of Finance Lease for the lessor namely direct financing, sales type lease or leveraged lease. Since the FMV and the cost are not equal, this is Sales type lease.

Calculations required to record the entries in the Lessor's books

(c) The Gross investment =MLP's +Un.GRV
=(Rs.29,382.40 x 8) + Rs.10,000
=Rs.245,059.20

(d) The Cost of Goods Sold = Historical Cost of the inventory + Initial direct costs –PV of the UnGRV

= Rs.100,000+Rs.2,500-Rs.4,038.80
= Rs.98,461.20

It is noteworthy that the initial direct costs have to be credited somewhere usually the Accounts Payable or Cash. The inventory account is credited for the carrying value of the asset, in this case Rs.100,000.

(e) The Adjusted Selling Price= PV of MLP's
= 15000-4038
=Rs.145,961.20 (see above calculation)

(f) The Unearned Finance Income= Gross Investment(i.e. lease receivable)-PV of the components making the gross investment.

The Present Value of these items is Rs.150,000 [(Rs.29,382.40 x 4.96764) + (Rs.10,000 x 0.40388)].
UFI =245059.20 – 1,50,000

(g) Therefore the entry necessary to record the lease is

	Rs.	Rs.
Lease Receivable	245,059.20	
Cost of goods sold	98,461.20	
Inventory		100,000.00
Sales		145,961.20
Unearned Finance Income		95,059.20
Accounts payable(initial direct costs)		2,500.00

The next step in accounting for a sales-type lease is to determine proper handling of the payment. Both principal and the interest are included in each payment. According to IAS 17, interest is recognized on a basis such that a constant periodic rate of return is earned over the term of the lease. This will require setting up an amortization schedule as illustrated below:

Date or year ended	**Cash payment (Rs.)**	**Interest (Rs.)**	**Reduction in principal (Rs.)**	**Balance of Net Investment (Rs.)**
1/1/05	-	-	-	150,000.00
12/31/05	29,382.40	18,000.00	11,382.40	138,617.00
12/31/06	29,382.40	16,634.11	12,748.29	125,869.31
12/31/07	29,382.40	15,104.32	14,278.08	111,591.23
12/31/08	29,382.40	13,390.95	15,991.45	95,599.78
12/31/09	29,382.40	11,471.97	17,910.43	77,689.35
12/31/05	29,382.40	18,000.00	11,382.40	138,617.00
12/31/10	29,382.40	9,322.72	20,059.68	57,629.67
12/31/11	29,382.40	6,915.56	22,466.84	35,162.83
12/31/12	29,382.40	4,219.57	24,162.83	10,000.00
	235,059.20	**95,059.20**	**140,000.00**	

The entries below illustrate the proper treatment to record the receipt of the lease payment and the amortization of the unearned finance income of the year ended 12/31/05.

Cash	29,382.40	
Lease receivable		29,382.40
Unearned finance income	18,000.00	

Interest revenue 18,000.00

It is noteworthy:

- There is explicit entry to recognize the principal reduction. This is done automatically when the net investment is reduced by decreasing the lease receivable(gross investment) by Rs.29,382.40 and the unearned finance income account by only Rs.18,000.00.

- The Rs.18,000.00 is 12% (implicit rate) of the net investment. The entries are to be made over the life of the asset .At the end of the lease term ,12/31/12, the asset is returned to the lessor and the following entry is required:

Asset 10,000
Lease Receivable 10,000

(If the estimated residual value has changed during the lease term, the accounting computations would have also changed to reflect this).

Answer 4

(a) Annual Payment

PV of Residual Value	10,000 x 0.7513=Rs.7,513*
PV of lease payments	Selling Price –PV of Residual Value
	= Rs.131,858 – Rs.7,513=Rs.124,345
Annual Payment	=Rs.124,345 / 2.4869**=Rs.50,000
*0.7513 is the PV of an amount due in 3 periods at 10%	
**2.4869 is the PV of an ordinary annuity of Re.1 per period for 3 periods, at 10% interest.	

As with any lease transaction, the first step must be to classify the lease appropriately. In this case, the PV of the lease payments (Rs.124,345) is equal to 94% of the FMV (Rs.131,858), thus could be considered as equal to substantially all of the FMV of the leased asset.

(b) Now we determine the **unearned interest** and the **net investment in lease**.

	Rs.
Gross Investment in lease [(3 x 50,000) + 10,000]	160,000
Cost of leased property	131,858
Unearned Finance Income	28,142

The unamortized initial direct costs are to be added to the gross investment in the lease, and the unearned finance income is to be deducted to arrive at the Net Investment in the lease. The Net Investment in the lease for this example is determined as follows:

Rs.

Gross Investment in lease	160,000
Add: Unamortized initial direct costs	7,500
Less:	
Unearned Finance Income	28,142
Net Investment in Lease	139,358

(c) Amortization Schedule:

Note:

The Net Investment in the lease (Gross Investment – Unearned Finance Income) has been increased by the amount of initial direct costs. Therefore, the implicit rate is no longer 10%.We must recompute the implicit rate, which is really the result of an internal rate of return calculation. We know that the lease payments are to be Rs.50,000 per annum and that a residual value of Rs.10,000 is available at the end of the lease term. In return for these payments(inflows) we are giving up equipment (outflow) and incurring initial direct costs (outflows), with a net investment of Rs.139,358 (Rs.131,858 + Rs.7,500). The only way to obtain the new implicit rate is through a trial balance and error calculation as set up below.

$$\frac{50,000}{(1+i)} 1 + \frac{50,000}{(1+i)} 2 + \frac{50,000}{(1+i)} 3 + \frac{10,000}{(1+i)} = \text{Rs.}139,358$$

Where i= implicit rate of interest

In this case , the implicit rate is equal to 7.008 %. Thus, the **amortization table** would be set up as follows:

	(a) Lease payments Rs.	**(b) Reduction in unearned interest Rs.**	**(c) PV x Implicit rate Rs.**	**(d) Reduction in initial direct costs (b-c) Rs.**	**(e) Reduction in PVI net investment (a - b + d) Rs.**	**(f) PVI net investment in lease (f)(n+1)=(f)n-(e) Rs.**
At inception						139,358
2005	50,000	13,186 (1)	9,766	3,420	40,234	99,124
2006	50,000	9,504 (2)	6,947	2,557	43,053	56,071
2007	50,000	5,455 (3)	3,929	1,526	46,071	10,000
	150,000	28,145*	20,642	7,503	129,358	

***Rounded**

(b.1) Rs.131,858 x 10%=Rs.13,186

(b.2) [Rs.131,858 – (Rs.50,000-RS.13,186)] x 10%= Rs.9,504

(b.3) [Rs.95,044 – (Rs.50,000-9,504)] x 10%= Rs.5,455

Here the interest is computed as 7.008% of the net investment. Note again that the net investment at the end of the lease term is equal to the estimated residual value.

(d) The entry made initially to record the lease is as follows:

Lease Receivable**[(Rs.50,000x3) + Rs.10,000]	160,000	
Asset acquired for leasing		131,858
Unearned lease revenue		28,142

When the payment (or obligation to pay) of the initial direct costs occurs, the following entry must be made:

Initial direct costs	7,500	
Cash		7,500

(e)Using the schedule above, the following entries would be made during each of the indicated years:

	2005		2006		2007	
Cash	50,000		50,000		50,000	
Lease Receivable		50,000		50,000		50,000
Unearned finance income	13,186		9,054		5,455	
Initial direct costs		3,420		2,557		1,526
Interest Income		9,766		6,947		3,929

Finally, when the asset is returned to the lessor at the end of the lease term, it must be recorded on the books. The necessary entry is as follows:

Used Asset	10,000	
Lease Receivable		10,000

**Also commonly referred to as the "gross investment in lease."