

### Solution:

(1)

Let us consider the valuation of the bonds at the time of purchase.

To do so, we need to first find the present value of the bonds. This can be done by breaking the bond's valuation into two different parts:

- Payment Part:

The bond pays  $\$20 \times 6\% = \$1.2$  million per period for around 20 periods.

This is an annuity compounded at 7% per period. Thus, the present value of the payments recorded will be  $\$1.2 \times 10.5940 = \$12.713$  million.

- Lumpsum Part:

The bond pays \$20 million after 20 periods.

The present value of this lumpsum when compounded at 7% per period will be given by  $\$20 \times 0.2584 = \$5.168$  million.

Thus, the present value of the bond will be  $\$12.713 + \$5.168 = \$17.881$  million, indicating that the bond was sold at a discounted price.

Now, to find the valuation 1 year after the issuance of the bonds, we can create the table as follows:

COMPUTATION OF NET BOND PAYABLE AFTER 1 YEAR (Amounts in millions of \$)					
Payment	Bond Payable	Bond Discount	Interest Expense	Interest Payable	Amortization on Discount
1 <sup>st</sup>	20.000	2.119	1.252	1.200	0.052
2 <sup>nd</sup>	20.000	2.067	1.255	1.200	0.055
<b>Final</b>	<b>20.000</b>	<b>2.012</b>	-	-	-

Using the final values, we see that the bond was worth \$17.988 million at the time of callback.

Thus, the company recorded **loss of \$1.012 million** on the callback of the bonds.

(2)

The impact is as follows:

(Entries are in millions)

Assets =	Liabilities +	Stockholders' Equity
-\$19.000 (cash)	-\$20.000 (bonds payable) +\$2.012 (bonds discount)	-\$1.012 (loss on early extinguishment)

(3)

Bonds Payable	20.000	
Loss on Extinguish	1.012	
To Cash		19.000
To Bonds Discount		2.012

(4)

For a gain, they should have purchased the bonds for \$17.988 - \$1.000 = \$16.988 million.

Thus, the Limestone Charters should have gone for \$16.988 million if they aimed for a gain on the callback of the bonds.