

**MASTER OF BUSINESS ADMINISTRATION
IN FINANCIAL MARKETS (MBAFM)**

Term-End Examination

00241

June, 2015

MCT-078 : FINANCIAL MODELLING

Time : 3 hours

Maximum Marks : 100

Note : Attempt any *five* questions. All questions carry equal marks.

1. (a) A finance company offers that it will pay a lumpsum of ₹ 44,650 at the end of five years to investors who deposit annually ₹ 6,000 for 5 years.
Find the Future Value Interest Factor for an Annuity for this contract.
- (b) What is the present value of the following cash stream if the discount rate is 14% ?

Year	Cash Flow	PVIF 14% n
0	5,000	1.000
1	6,000	0.877
2	8,000	0.769
3	9,000	0.675
4	8,000	0.592

10+10

2. Shyam borrows ₹ 80,000 for a musical system at a monthly interest of 1.25%. The loan is to be repaid in 12 equal monthly instalments, payable at the end of each month. Prepare the loan amortization schedule. Present Value Interest Factor for an Annuity at $r = 1.25\%$ and $n = 12$ is 11.0786. 20
3. What is financial engineering ? Discuss the factors that lead to the emergence of financial engineering. 20
4. What are the steps taken by the financial institutions while appraising the project ? How do the financial institutions monitor the projects financed by them ? 20
5. Develop the formula expressing the growth rate (g) sustainable with internal equity in terms of 4×5
- (a) the net profit margin (m)
 - (b) the target dividend payout ratio (d)
 - (c) the asset to equity ratio (A/E)
 - (d) the asset to sales ratio (A/S)

6. Metcalf Engineers is considering a proposal to replace one of its hammers. The following information is available :
- (a) The existing hammer was bought 2 years ago for ₹ 1 million. It has been depreciated at the rate of $33\frac{1}{3}\%$ per annum. It can be presently sold at its book value. It has a remaining life of 5 years after which, on disposal, it would fetch a value equal to its then book value.
- (b) The new hammer costs ₹ 1.6 million. It will be subject to a depreciation rate of $33\frac{1}{3}\%$. After 5 years, it is expected to fetch a value equal to its book value. The replacement of the old hammer would increase the revenue by ₹ 0.2 million per year and reduce the operating cost (excluding depreciation) by ₹ 1.5 million per year. Compute the incremental post tax cash flows associated with the replacement proposal assuming a tax rate of 50%. 10+10
7. What do you understand by Interest rate risk ? Discuss the sources and effects of interest rate risk. 20
8. Explain the following in detail : 10+10
- (a) Currency Swaps
- (b) Forward Rate Agreements (FRA)