

Roll No.

BBA-505(O)

**B. B. A. (Fifth Semester)
EXAMINATION, Dec., 2013**

(Old Course)

Paper Fifth

FINANCIAL MATHEMATICS

Time : Three Hours] [Maximum Marks : 75

Note : Attempt all questions. All questions carry equal marks.

1. Solve any *three* of the following :
 - (a) If you invest ₹ 10,000 today at a compound interest of 9%, what will be its future value after 60 years ?
 - (b) What is the present value of ₹ 15,00,000 receivable 50 years from now ? If the discount rate is 12%.
 - (c) What is the present value of an income stream which provides ₹ 1,500 at the end of year one, ₹ 3,000 at the end of year two and ₹ 5,000 during each of the years 3 through 10, if the discount rate is 12 percent ?
 - (d) You have a choice between ₹ 8,000 now and ₹ 25,000 after 10 years. What would you choose ? What does your preference indicate ?

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Or

A project with capital expenditure of ₹ 12,00,000 is expected to produce the following profits (after deducting depreciation) :

Year	Amount (₹)
I	80,000
II	1,60,000
III	1,80,000
IV	60,000

You are required to calculate the rate of return.

2. How does compounding and discounting help in determining

- (a) Capital recovery
- (b) Sinking funds ?

Or

From the following information, calculate the present value at 12% discount rate :

Year	Cash Flow (₹)
0	2,000
1	3,000
2	4,000
3	5,000
4	6,000
5	8,000

3. Write short notes on any three of the following :

- (a) Life Insurance
- (b) CAPM

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(c) Distinction among valuation concepts

- (d) Amortisation of loan
- (e) Market portfolio
- (f) Systematic risk

4. You have a portfolio of the following four shares :

Share	Beta	Investment (₹)
A	0.80	1,10,000
B	1.25	1,00,000
C	1.00	65,000
D	0.60	1,25,000
		4,00,000

What is the expected rate of return on your portfolio if the risk free rate of return is 8 percent and the expected market rate of return is 15 percent ?

Or

What factors must be considered while valuing bonds ? Explain the basic bond valuation model and bond value theorems.

5. An investor has a share whose dividend is expected to grow at 12% for 3 years and 8% hereafter. What is the value of the share if the current dividend per share is ₹ 4 and the required rate of return is 10% ?

Or

Write short notes on the following :

- (a) Decision Tree Analysis
- (b) Annuities
- (c) I. R. R.

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