

**GUJARAT NATIONAL LAW UNIVERSITY
GANDHINAGAR**

Course: **Financial Management**

Semester- V (Batch: 2020-25)

End Semester Examination: November 2022

Date: 12th Nov, 2022

Duration: 3 hours

Max. Marks: 50

Instructions:

- Read the questions properly and write the answers in the given answer book.
- Do not write anything on the question paper.
- The respective marks for each question are indicated in-line.
- Indicate correct question numbers in front of the answer.
- No questions or clarification can be sought during the exam period, answer as it is, giving reason, if any.
- Use of a calculator is permitted.

(Answer Any Five)

Marks

Q.1 A manager is considering two investment proposals with the following projections.

(10)

Project	A	B
Initial Investment	5,00,000	10,00,000
Life of the Project	3 years	4 years
Cash Inflows	Year 1- Rs.2,00,000 Year 2- Rs.2,50,000 Year 3- Rs.3,00,000	Rs.3,00,000 equally annually at the end of the year
Cost of Capital	10%	10%

Determine IRR, NPV and Profitability Index. Also, analyze sensitivity of each proposal with regard to the discount rate and initial investment. Analyze the results and decide which project should be accepted in your opinion.

Q.2 A company has reported an Earnings Per Share (EPS) of Rs.10 which is likely to remain constant for over a year. Its cost of equity capital (k_e) will also remain constant at 10% for the year. Find out the **market price** of the share and suggest the optimum dividend policy under combinations of different rates of return (r), of 8%, 10%, 12% and different dividend payout ratios of 0%, 30%, 60% and 100% under both Walter's model and Gordon's model of dividend relevance.

(10)

Market price is to be determined under both Walter's model and Gordon's model separately in the following manner;

Rate of Return →	8%	10%	12%
Payout Ratio ↓			
0%	?	?	?
30%	?	?	?
60%	?	?	?
100%	?	?	?

- Q.3 a) A firm is considering various investment proposals for a cash reserve of Rs.1,00,000. It has the option of investing it at 10% government securities for two years or investing it in the equity market which will give returns at the following rate. (7+3=10)

Year 1		Year 2		
Return↓	Return→	8%	10%	12%
	Probability↓	Probability↓	Probability↓	Probability↓
10%	.3	.5	.4	.1
12%	.5	.2	.5	.3
14%	.2	.3	.1	.6

Decide which option is better for the company applying the multi-stage decision tree approach.

- b) A company issued 10% perpetual debentures of Rs.1,00,000. The debentures were issued at 10% discount. The company incurred expenses of Rs.20,000 for obtaining credit rating and Rs.8,000 for legal advice at the time of issue. Determine the after tax cost of the perpetual debt if the tax rate prevalent is 30%.
- Q.4 a) The share capital of a company is Rs.10,00,000 with shares of face value of Rs.10. It has 10% Debt capital of Rs.6,00,000. The sales of the firm is 3,00,000 units per annum at a selling price of Rs.5 per unit and variable cost of Rs.3 per unit. The annual fixed operating costs amount to Rs.2,00,000. The company pays tax at the rate of 30%. If the sales volume is expected to increase by 20%, determine the following (6+3+1=10)
- Percentage increase in Earnings per Share (EPS)
 - Combined Leverage at both the existing and expected level of sales
- b) Corp Finance Company advertises that it will pay a lump sum of Rs. 10,000 at the end of 5 years to investors who deposit Rs.1000 annually for five years. What interest rate is implicit in this offer?
- c) Calculate the effective annual rate if the quoted rate of interest p.a. is 12% compounded continuously.
- Q.5 a) A firm presently has Rs.1,00,000 of fixed capital requirement and market value. It is currently fully financed by equity. The cost of equity is 12%. However, it is interested to use debt as the prevailing market conditions are favorable. The firm is interested in trying combinations of 20%, 50% and 80% debt and remaining equity respectively. The cost of debt is 10%. (6+4=10)

The following changes are expected in the cost of equity and cost of debt as a response to change in debt equity ratio.

Debt/Equity Ratio	Current Cost of Equity (k_e)	Expected Cost of Equity (k_e)	Current Cost of Debt (k_d)	Expected Cost of Debt (k_d)
0/100	12%	12%	10%	10%
20/80	12%	12%	10%	10%
50/50	12%	15%	10%	12%
80/20	12%	18%	10%	14%
100/0	12%	20%	10%	16%

Examine the value of the firm under the traditional approach for combinations of debt and equity of 20/80, 50/50 and 80/20.

- b) A firm operates with Overall Cost of Capital (k_o) of 10%. The Cost of Debt (k_d) is 7%. According to Modigliani and Miller Approach (Proposition II), determine Cost of Equity (k_e) for combinations of Debt and Equity of 0%, 30% and 60%.

- Q.6
- Discuss Capital Asset Pricing Model for determination of Cost of Equity. (3+5+2=10)
 - Discuss Modigliani and Miller (MM) approach of irrelevance of dividend payments under perfect capital market conditions and situations of sufficiency and deficiency of cash with the firm for payment of dividends and the concept of homemade dividends by shareholders.
 - What is a reverse mortgage loan?

TIME VALUE OF MONEY

1. Future Value of a single present cash outflow (Investment):
$$\text{Future Value (FV)} = \text{PV} (1 + r)^n / \text{PV} \times \text{CVF}_{(r,n)}$$
2. Present Value of a single future cash inflow (Proceeds of investment)
$$\text{Present Value (PV)} = \text{FV} / (1 + r)^n / \text{FV} \times \text{PVF}_{(r,n)}$$
3. Future Value of a single present cash outflow (Investment) with non annual compounding
$$\text{Future Value (FV)} = \text{PV} (1 + r/m)^{mn}$$
4. Effective Interest Rate
$$(1 + r_e) = (1 + r/m)^m$$
5. Continuous Compounding
$$\text{Effective Annual Rate (EAR)} = e^r - 1$$
6. FV of a series of equal present cash outflows (Ordinary Annuity- end)
$$\text{FV} = \text{Annuity Amount} \times \text{CVAF}(r,n)$$
7. FV of a series of equal present cash outflows (Annuity Due - beginning)
$$\text{FV} = \text{Annuity Amount} \times \text{CVAF}(r,n) \times (1 + r)$$
8. PV of a series of equal future cash inflows (Ordinary Annuity- end)
$$\text{PV} = \text{Annuity Amount} \times \text{PVAF}(r,n)$$
9. PV of a series of equal future cash inflows (Annuity Due - beginning)
$$\text{PV} = \text{Annuity Amount} \times \text{PVAF}(r,n) \times (1 + r)$$
10. PV of an infinite series of equal future cash inflows or *perpetuity*
$$\text{PV}_p = \text{CF}_1 / (1 + r)^1 + \text{CF}_2 / (1 + r)^2 + \dots \text{CF}_{\text{infinity}} / (1 + r)^{\text{infinity}}$$
11. PV of an infinite series of periodic future cash inflows which grow at a constant rate per period
$$\text{PV}_p = \text{Cash Flow}_{1(\text{end of the period})} / (r - g)$$
12. PV of a finite series of periodic future cash inflows which grow at a constant rate per period
$$\text{PV}_p = \text{CF}_1 / (r - g) [1 - \{(1 + g) / (1 + r)\}^n]$$
13. Sinking Fund
$$\text{FV} = \text{Annuity Amount} \times \text{CVAF}(r,n)$$

