

ID (last 3 digit)

Batch

NFC



Daffodil International University

Faculty of Science & Information Technology

Department of Information Technology and Management

Midterm Examination, Summer 2025

Course Code: Introduction to Finance; Course Title: ITM- 307

Time: 1:30 Hr.

Course Teacher: NI

Marks: 25

1	Scenario: Batul and A-had-i have started learning about Finance. A-had-i was discussing buying a house in Kapverdy and some other financial decisions with Batul, But to confuse A-had-i, Batul explains lots of misinformation A-had-i . So A-had-i came to you for better clarity on the matter to understand the topics. (Total-10)															
	a)	Define the agency problem and list down how to solve the agency problem	[2]	CO- 1 Level-5												
	b)	Explain the <u>dividend decisions</u> from the Managerial Function of the Financial Manager.	[2]													
	c)	Explain the principles of Risk and return with an example	[2]													
	d)	Explain the difference between Profit maximazation wealth maximization	[2]													
	e)	Recommend with reasons which financial source should A-had-i use for buying a house. [note: use the concept of Internal and external funds]	[2]													
2.	Solve financial decisions dilimas (Total-15)															
	a)	Find the future value of \$ 524,550 at 13 percent for 21 years and 6 months Find the future value of \$ 500,700 at 11 percent compounded monthly for 21 years Requirement: Predict how much return A-had-i can accumalatal form both investments	[5]	CLO- 4 Level- 5												
	c)	Option 1: in installment purchasing a house, given that the interest rate is 17% compounded quarterly at the beginning of the period <table border="1"><tr><td>Annual payment Number</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5.</td></tr><tr><td>Payment Amount</td><td>\$95,000</td><td>\$ 65,500</td><td>000</td><td>\$23,600</td><td>\$54,000</td></tr></table> Option 2: down payment of \$ 220,500. Explain which option should A-had-i take?	Annual payment Number		1	2	3	4	5.	Payment Amount	\$95,000	\$ 65,500	000	\$23,600	\$54,000	[5]
Annual payment Number	1	2	3		4	5.										
Payment Amount	\$95,000	\$ 65,500	000	\$23,600	\$54,000											
	d)	A-had-i to buy a BMW on 2040 . He will start saving from 2027. He wants to accumulate 95,50,000. What should be the annual installment amount at 11% annual interest rate compounded semi-annually in an annuity due.	[2.5]													
	e)	A-had-i will receive 75000 every year for the next 12 years for selling software or receive full BDT 500000 cash after 10 years. Current bank interest is 16% compounded annually. Which one will A-had-i take?	[2.5]													

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$$= \frac{CF_t}{(1+r)^t}$$

$$FV_t = CF_0(1+r)^t$$

$$= \sum_{t=0}^n \frac{CF_t}{(1+r)^t}$$

$$= \sum_{t=0}^n CF_t(1+r)^{n-t}$$

$$PMT \left[\frac{1 - (1+r)^{-t}}{r} \right]$$

$$FVA_t = PMT \left[\frac{(1+r)^t - 1}{r} \right]$$

$$r = \frac{r_{nom}}{m}$$

$$= \left(1 + \frac{r_{nom}}{m} \right)^m - 1$$

$$= \frac{CF_t}{\left(1 + \frac{r_{nom}}{m} \right)^{mt}}$$

$$= PMT \left[\frac{\left(1 + \frac{r_{nom}}{m} \right)^{mt} - 1}{\frac{r_{nom}}{m}} \right]$$

$$= PMT \left[\frac{1 - \left(1 + \frac{r_{nom}}{m} \right)^{-mt}}{\frac{r_{nom}}{m}} \right]$$