

ISLAMIC UNIVERSITY OF TECHNOLOGY (IUT)
ORGANISATION OF ISLAMIC COOPERATION (OIC)

DEPARTMENT OF BUSINESS AND TECHNOLOGY MANAGEMENT

Final Examination

Summer Semester, A. Y. 2020-2021

Course No. : BTM 4601

Time : 3 Hours

Course Title : Financial Management II

Full Marks : 150

Answer **all 6 (six)** questions. All questions carry equal marks. Marks in the margin indicate full marks. Programmable calculators are not allowed.

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| 1. | a) Why should financial managers choose the capital structure that maximizes the value of the firm? | 05 | (CO2)
(PO1) |
| | b) Explain the proposition of MM's theory in considering tax and without tax elaborately. If we consider only the effect of taxes, what is the optimal capital structure under MM proposition with tax? | 15 | (CO1)
(PO1) |
| | c) Explain the static capital structure theory. | 05 | (CO1)
(PO1) |
| 2. | a) Briefly describe the agency problem that exists between owners and lenders. How do lenders cause firms to incur agency costs to resolve this problem? | 05 | (CO2)
(PO1) |
| | b) How does asymmetric information affect the firm's capital structure decisions? How do the firm's financing actions give investors signals that reflect management's view of stock value? | 05 | (CO2)
(PO1) |
| | c) Hawaiian Macadamia Nut Company has collected the data in the following table with respect to its capital structure, expected earnings per share, and required return. | 15 | (CO3)
(PO2) |

Capital Debt ratio	Expected earnings per share	Required return, rs
0%	3.12	13%
10%	3.90	15%
20%	4.80	16%
30%	5.44	17%
40%	5.51	19%
50%	5.00	20%
60%	4.40	20%

- i. Compute the estimated share value associated with each of the capital structures.
- ii. Determine the optimal capital structure on the basis of (1) maximization of expected earnings per share and (2) maximization of share value.
- iii. Which capital structure do you recommend? Why?

3. a) Explain the difference between bankruptcy liquidation and bankruptcy reorganization. 05 (CO2) (PO1)
- b) Firm R has sales of 100,000 units at \$2.00 per unit, variable operating costs of \$1.70 per unit, and fixed operating costs of \$6,000. Interest is \$10,000 per year. Firm W has sales of 100,000 units at \$2.50 per unit, variable operating costs of \$1.00 per unit, and fixed operating costs of \$62,500. Interest is \$17,500 per year. Assume that both firms are in the 40% tax bracket. 20 (CO3) (PO2)
- Compute the degree of operating, financial, and total leverage for firm R.
 - Compute the degree of operating, financial, and total leverage for firm W.
 - Compare the relative risks of the two firms.
 - Discuss the principles of leverage that your answers illustrate.
4. a) Why is it important to evaluate capital budgeting projects on the basis of incremental cash flows? What effect do sunk costs and opportunity costs have on a project's incremental cash flows? 05 (CO2) (PO1)
- b) Diagram and describe the three components of the relevant cash flows for a capital budgeting project. 10 (CO2) (PO1)
- c) Centennial Catering, Inc., is considering two mutually exclusive investments. The company wishes to use a CAPM-type risk-adjusted discount rate (RADR) in its analysis. Centennial's managers believe that the appropriate market rate of return is 12%, and they observe that the current risk-free rate of return is 7%. Cash flows associated with the two projects are shown in the following table. 10 (CO3) (PO2)

	Project X	Project Y
Initial Investment	70000	78000
	Cash Inflow	
Year		
1	30000	32000
2	30000	32000
3	30000	38000
4	30000	46000

- Use a risk-adjusted discount rate approach to calculate the net present value of each project, given that project X has a RADR factor of 1.20 and project Y has a RADR factor of 1.40. The RADR factors are similar to project betas.
- Discuss your findings in part a, and recommend the preferred project.

5. a) Explain why a mere comparison of the NPVs of unequal-lived, ongoing, mutually exclusive projects is inappropriate. Describe the annualized net present value (ANPV) approach for comparing unequal-lived, mutually exclusive projects. 05 (CO2) (PO1)
- b) What is capital rationing? In theory, should capital rationing exist? Why does it frequently occur in practice? Compare and contrast the internal rate of return approach and the net present value approach to capital rationing. Which is better? Why? 05 (CO2) (PO1)
- c) A project costs \$2.5 million and will generate cash flows in perpetuity of \$240,000. The firm's cost of capital is 9%. Calculate the annual EVA in a year. 05 (CO3) (PO2)
- d) Bryson Sciences is planning to purchase a high-powered microscopy machine for \$55,000 and incur an additional \$7,500 in installation expenses. It is replacing similar microscopy equipment that can be sold to net \$35,000, resulting in taxes from a gain on the sale of \$11,250. Because of this transaction, current assets will increase by \$6,000 and current liabilities will increase by \$4,000. Calculate the initial investment in the high-powered microscopy machine. 10 (CO3) (PO2)
6. a) What is the difference between the strategic NPV and the traditional NPV? Do they always result in the same accept-reject decisions 05 (CO2) (PO1)
- b) If a firm fails to consider growth options, would this cause it to underestimate or overestimate projects' NPVs? Explain. 05 (CO2) (PO1)
- c) Cotner Clothes Inc. is considering the replacement of its old, fully depreciated knitting machine. Two new models are available: (i) Machine 190-3, which has a cost of \$190,000, a 3-year expected life, and after-tax cash flows of \$87,000 per year, and (ii) Machine 360-6, which has a cost of \$360,000, a 6-year life, and after-tax cash flows of \$98,300 per year. Assume that both projects can be repeated. Assume that Cotner's WACC is 14%. Using the ANPV approaches, which model should be selected? Why? 15 (CO3) (PO2)