K.J. Somaiya Institute of Management Studies & Research

Course: PGFS – V Trim End Term Exam

Sub: Infrastructure and Project Financing

Date of Exam: 11/01/2019 Time: 3 Hours Marks: 50

IMPORTANT INSTRUCTIONS:

1. Exam is to be answered COMPLETELY in SPREADSHEET giving comments/discussion for each question attempted in a text box in the solution worksheet.

2. Save the EXCEL output for all questions in the same file across different sheets.

3. Attempt any one question from section A. Each question in section A carries 25 Marks.

4. Attempt all questions from section B. The weightage of each question in section B is given with the question.

5. Answers to conceptual questions/explanation of answers should be given in the same worksheet in a text box.

SECTION A

Case 1: MIDLAND ENERGY RESOURCES, TNC. : COST OF CAPITAL (Soft copy of the case and spreadsheet model provided)

Answer the following based on case text and spreadsheet provided herewith**.** ***<u>(Save each outcome in one file across separate sheets).</u>***

a. What is WACC of Midland as a whole on the basis of the (1) prevailing D/V and (2) target D/V given in table 1? (Use yield to maturity of 30-year US Treasury bonds as risk free rate).

b. Calculate the divisional equity beta and WACC for (1) Exploration & Production and (2) Refining & Marketing divisions. (Use yield to maturity of 30-year US Treasury bonds as risk free rate.)

c. Should Midland use a single corporate hurdle rate for evaluating investment opportunities in all of its divisions? Why or why not?

OR

Case 2: HOLA KOLA – THE CAPITAL BUDGETING DECISION (Soft copy of the case provided herewith).

Answer the following based on case text***. <u>(Save each outcome in one file across separate sheets).</u>***

1. What are the relevant cash flows? In this capital budgeting analysis project, how should we treat the following items:
   a. Consultant's market study cost?
   b. Potential rental value of unoccupied annex?
   c. Interest charges?
   d. Working capital?
2. Perform sensitivity analyses on the following variables using scenarios given below and comment on your findings:
   a. Sales volume
   b. Price
   c. Direct Labor
   d. Materials
   e. Energy cost

Scenario 1: Calculate NPV, IRR, Payback Period, Discounted Payback Period and Profitability Index for Base case Scenario

Scenario 2: Calculate NPV, IRR, Payback Period, Discounted Payback Period and Profitability Index in light of the fact that the energy costs, labor costs and the material costs are likely to rise by 5% a year, starting in Year 2. The consultants feel that the company cannot pass the increased cost to the customers. What do you observe?

Scenario 3: Calculate NPV, IRR, Payback Period, Discounted Payback Period and

Profitability Index in light of the fact that the energy costs, labor costs and the material costs are likely to rise by 5% a year, starting in Year 2. The consultants feel that the company can pass a part of increased cost to the customers by increasing price per unit by 5%, but with a decrease in volume by 2%. What do you observe?

3. Should Bebida Sol undertake this project?

SECTION B

Q2. **Mini Case** **(MM 15)**

Goodlife Home Appliances Ltd is considering the manufacture of a new Dishwasher B-10, for which the following information has been gathered. B-10 is expected to have a product life cycle of five years after which it will be withdrawn from the market. The sales from this product are expected to be as follows:

Year	1	2	3	4	5
Sales (Rs. in million)	800	950	1000	1200	1000

Other relevant information is as follows:

- The capital equipment required for manufacturing B-10 costs Rs. 900 million and it will be depreciated at the rate of 25 percent per year as per the WDV method for tax purposes. The expected net salvage value after 5 years is Rs. 150 million.
- The working capital requirement for the project is expected to be 10% of sales. Working capital level will be adjusted at the beginning of the year in relation to the sales for the year. At the end of five years, working capital is expected to be liquidated at par, barring an estimated loss of Rs. 5 million on account of bad debt, which of course, will be tax-deductible expense.
- The accountant of the firm has provided the following estimates for the cost of B-10

Raw material cost	:	45 percent of sales
Variable manufacturing cost	:	15 percent of sales
Fixed annual operating and		

maintenance costs	:	Rs. 3 million
Variable selling expenses	:	10 percent of sales

- The tax rate for the firm is 30 percent.

Using the information given above, estimate the post-tax incremental cash flows for the project to manufacture B-10.

Q3. ILM Ltd. is planning to invest INR 40 million in capital investment projects. It is considering four projects given in spreadsheet 'Q3 IPF FS 2018 EXAM'. The company can invest in any or all of the given projects. **(MM 10)**

Rank the projects using:

1. IRR
2. NPV

and answer the following:

a. Which projects will you accept, if all projects are independent of each other?

b. Which projects will you accept, if all projects are mutually exclusive?

Following assumptions are made by the analysts while evaluating the projects:

a. All projects have equivalent risk,
b. Discount rate is 10 %
c. Investment in each project will be depreciated to zero on a SLM basis for tax purpose.
d. The tax rate is 40 %.
e. No project has any salvage value at the end of their respective lives.
f. Cash flows occur at the end of the period

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