K.J. Somaiya Institute of Management Studies & Research

Course: PGDM-FINANCE – V Trim End Term Exam

Sub: Infrastructure and Project Financing

Date of Exam: 30/12/2017 Time: 3 Hours Marks: 50

IMPORTANT INSTRUCTIONS:

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

2. Save the EXCEL output for each question in the same file across different sheets.

3. Attempt any one question from section A. Each question in section A carries 20 Marks.

4. Attempt any three questions from section B. Each question in section B carries 10 Marks.

5. The first four questions attempted will be evaluated.

SECTION A

Case 1: NH 34 (Soft copy of the case and spreadsheet model provided)

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

a. What is equity IRR and NPV in each scenario?

b. Evaluate the various asset sale options (sell 50%, sell 74% and sell 100% of the project to an outside investor) under scenarios given below. For all scenarios, assume a 15% base discount rate for HCON.

Scenario 1: Investor base case (traffic grows as per investor projections)

Scenario 2: Company base case (traffic grows as per HCON projections)

Scenario 3: Investor case where traffic is 90% of investor projections and the transaction of sale happens 1 year after the road is completed.

Scenario 4: Taking the scenario 3 above, additionally assume that traffic growth is 100 basis points lower than expected.

Scenario 5: Investor base case where traffic growth is 100 basis points higher than expected and transaction of sale happens 1 year after the road is completed.

Which of the three sale of stake option is the best? Why?

OR

Case 2: Valuing Investment Projects (Analyze only Growth Enterprises & Electronics Unlimited) (Soft copy of the case provided herewith).

Questions for analysis are given in the case text.

SECTION B

Q2. **Mini Case**

Crystal solutions Ltd. is planning a project involving replacement of an old machine with a new machine. The old machine bought a few years ago has a book value of Rs. 12 lakhs and it can be sold to realise a post-tax salvage value of Rs. 15 lakhs. It has a remaining life of 4 years after which its net salvage value is expected to be Rs. 3 lakhs. It is being depreciated annually at a rate of 25 percent under WDV method.

The new machine costs Rs. 50 lakhs. It is expected to fetch a net salvage value of Rs. 24 lakhs after 4 years. The depreciation rate applicable to it is 25 percent under WDV method. The incremental working capital associated with this machine is Rs. 8 lakhs and it is expected to be recovered at its book value at the end of 4 years. The new machine is expected to bring a savings of Rs. 9 lakhs annually in manufacturing costs (other than depreciation). The tax rate applicable to the firm is 32 percent.

Estimate the cash flow associated with the replacement project.

Q3. Growmore Fertilizer Company has a debt-equity of 1.25 to 1.0. Its cost of debt funds is 12% and it has a marginal tax rate of 40% percent. Growmore is considering a proposal to diversify into petrochemicals, a field that is considerably different from its own. It regards Sunrise Petrochemicals as a good proxy company. Sunrise has a debt-equity ratio of 1.5, beta of 1.30, and an effective tax rate of 40 percent.

(a) If Growmore wishes to manufacture chemicals, what systematic risk (equity beta) is involved if it intends employing the same amount of leverage in the new project as it currently employs?

(b) If the risk-free rate is 12 percent and the expected return on the market portfolio is 18 percent, what is the required rate of return for Growmore's Petrochemical project?

Q4. Nikhil Electronics Limited is evaluating a capital project requiring an outlay of Rs. 8 million. It is expected to generate a net cash inflow of Rs. 2 million annually for 6 years. The opportunity cost of capital is 18%. Nikhil Electronics can raise a term loan of Rs. 5 million for the project. The term loan will carry a rate of interest of 15%, payable annually and the loan amount will be repayable in 5 equal installments, the first installment falling due at the end of the second year. The balance amount required for the project can be raised by issuing external equity. The issue cost is expected to be 10 percent. The tax rate for the company is 40%.

a. What is the Base – case NPV?
b. What is the APV if the base-case NPV has to be adjusted for only the issue cost of external equity?
c. What is the Present Value of Tax Shield on debt finance?

Q5. Modern Foods is seriously considering a proposal for a lemon juice project. The lemon juice would be produced in an unused building adjacent to the main plant of Modern Foods. The building, owned by Modern Foods, is fully depreciated. However, it can be rented out for an annual rental of Rs.1 million. The outlay on the project is expected to be Rs.25 million - Rs.15 million toward plant and machinery and Rs.10

million toward gross working capital. You can assume that the outlay will occur right in the beginning. This means that there is no interest during the construction period.

The proposed scheme of financing is as follows: Rs.10 million of equity, Rs.8 million of term loan, Rs.5 million of working capital advance, and Rs.2 million of trade credit.

The term loan is repayable in 8 equal semi-annual installments of Rs.1 million each. The first installment will be due after 18 months. The interest on the term loan will be 15 percent.

The levels of working capital advance and trade credit will remain at Rs.5 million and Rs.2 million respectively, till they are paid back or retired at the end of 5 years, which is the expected life of the project. Working capital advance will carry an interest rate of 14 percent. The lemon juice project is expected to generate revenue of Rs.30 million a year. The operating costs (excluding depreciation and interest) are expected to be Rs.20 million a year.

For tax purposes, the depreciation rate on fixed assets will be 25 percent as per the written down value method. Assume that there is no other tax benefit. The net salvage value of plant and machinery is expected to be Rs.5 million at the end of year 5. Recovery of working capital, at the end of year 5, is expected to be at book value. The income tax rate is expected to be 30 percent.

Estimate the cash flows from ***the point of equity investors.***

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