Enrolment No. _____

AHMEDABAD UNIVERSITY

AMRUT MODY SCHOOL OF MANAGEMENT

UNDERGRADUATE / GRADUATE PROGRAMMES

2021-2022 WINTER SEMESTER

END SEMESTER EXAMINATION

FAC533 CORPORATE INVESTMENTS AND VALUE CREATION

Date: 17-5-2022
Time: 09.00 am – 11.00 am

Total Marks: 40
No. of printed pages: 3

Student Instructions

1. This is a closed-book, closed-notes exam
2. Total Duration of this exam: 2 hours.
3. There are no choices. All eight questions need to be answered
4. Only scientific calculator usage is allowed.
5. Students are prohibited from using cell phones, computers, laptops, or for that matter any electronic gadget.
6. Students are expected to state appropriate equations, as they deem fit, while answering these questions.
7. For all questions, a student has to show how he/she has arrived at the answer.
8. Finally, students should write legibly.

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1. Prithvi Robotics currently (2004) does not pay a dividend. However, the company is expected to pay a Rs. 1.00 dividend two years from today (2006). The dividend is then expected to grow at a rate of 20 percent a year for the following three years. After the dividend is paid in 2009, it is expected to grow forever at a constant rate of 7 percent. Currently, the risk-free rate is 6 percent, market risk premium ($r_M - r_{RF}$) is 5 percent, and the stock's beta is 1.4. What should be the price of the stock today? **[6 Marks]**

2. Prachi and Sons Inc. has a target capital structure that calls for 40 percent debt, 10 percent preferred stock, and 50 percent common equity. The firm's current after-tax cost of debt is 6 percent, and it can sell as much debt as it wishes at this rate. The firm's preferred stock currently sells for Rs. 90 per share and pays a dividend of Rs. 10 per share; however, the firm will net only Rs. 80 per share from the sale of new preferred stock. Ross's common stock currently sells for Rs. 40 per share. The firm recently (@t=0) paid a dividend of Rs. 2 per share on its common stock, and investors expect the dividend to grow indefinitely at a constant rate of 10 percent per year. Determine the firm's Weighted Average Cost of Capital (WACC). **[5 Marks]**

3. A young couple is planning for the education of their two children. They plan to invest the same amount of money at the end of each of the next 16 years, i.e., the first contribution will be made at the end of the year 1 and the final contribution will be made at the time the oldest child enters college. The money will be invested in securities that are certain to earn a return of 8 percent each year. The oldest child will begin college 16 years from today (@ t=16) and the second child will begin college 18 years from today (@t=18). The parents anticipate college costs of $25,000 a year (per child). These costs must be paid at the end of each year of education. If each child takes four years to complete their college degrees, then how much money must the couple save each year for the next 16 years, starting from t=1 to t=16, so as to meet the entire cost of education of the two children?

[8 Marks]

4. Jayesh Bookstores is thinking about expanding its facilities. The expansion will require the company to purchase today (t = 0) Rs. 5 million of equipment. The equipment will be depreciated, over the following four years at the following rates: 33% in the first year; 45% in the second year; 15% in the third year and 7% in the last year. The expansion will require the company to increase its net operating working capital by Rs. 500,000 today (t = 0). This net operating working capital will be recovered at the end of four years (t = 4). The equipment is not expected to have any salvage value at the end of four years. The company's operating costs, excluding depreciation, are expected to be 60 percent of the company's annual sales. The expansion will increase the company's sales. The projected increases, all relative to current sales are as follows.

Year 1:Rs. 3.0 million
Year 2: Rs. 3.5 million
Year 3: Rs. 4.5 million
Year 4: Rs. 4.0 million

After the fourth year, the equipment will be obsolete, and will no longer provide any additional incremental sales. The company's tax rate is 40 percent and the company's other divisions are expected to have positive tax liabilities throughout the project's life. The WACC for the project is 10 percent. What is the proposed project's NPV? **[10 Marks]**

5. The Navjivan Co. Ltd. is trying to determine its optimal average cash balance. The firm has determined that it will need Rs. 5,000,000 net new cash during the coming year. The fixed transaction cost of converting securities to cash is Rs. 50, and the firm earns 10 percent on its marketable securities investments. According to the Baumol model
   a. What is the optimal transaction size for transfers from marketable securities to cash?
   b. What should be Norris' average cash balance?
   c. What will be the total cost to Norris of maintaining the optimal average cash balance?

Hint:

$$C = \sqrt{\frac{2bT}{I}}$$

T: Total Cash requirement; I: Interest earned on marketable securities; b: transaction cost for conversion; C: Optimum size of conversion of marketable securities to cash.

[5 Marks]

6. What are Modigliani and Miller Propositions I and II. Explain descriptively along with equations. How similar or different are these propositions in a world of no taxes as compared to a world of taxes. **[6 Marks]**