Question 1 (50 marks)

Robinson Company (RC) intends to enter the contract collection service industry. RC is now considering setting up a subsidiary to offer such service to small and medium-sized firms. The charge is linked to the amount collected for its client. If the amount is no more than $200, the charge would be 50% of the collection; if the amount is between $200 and $600, RC would get 40% of the total amount collected; and if the amount is more than $600, 35% of the total collection would be paid to RC. RC forecasts that its subsidiary can have the following amount of business in the first year of operation:

Account type	**Number of accounts**	**Average collections for each account**
No more than $200	5,000	$100
Between $200 and $600	2,000	$300
More than $600	1,000	$800

The number of accounts in each type is anticipated to grow at an annual rate of 10% during the projected eight-year life of this collection venture. The average collections for each account are assumed to be unchanged.

In addition, RC needs to pay $200,000 to lease an office for the first year. The lease expense would grow at 10% per annum. The lease contract requires RC to settle the rent payment at the end of each year. Operating expenses other than depreciation would be $300,000 in the first year and is expected to grow at 10% annually.

To start the subsidiary, RC has to invest $200,000 in net working capital at the beginning. Moreover, RC needs to pay $300,000 and $20,000 to purchase and instal the new equipment. This equipment will be depreciated using the straight-line method over eight years. The salvage value for the equipment would be $80,000. However, the equipment is sold at $60,000 at the end of eight years. The firms' marginal tax rate is estimated to be 30% over the project's life. The required rate of return for RC on projects of average risk is 40%.

Required

1. What is the net investment RC needs to set up the collection subsidiary? (6 marks)
2. Estimate the annual net cash flows over the projected eight-year life of this subsidiary. (18 marks)
3. Evaluate the net present value of this investment given that its risk is average. (5 marks)
4. Assess whether RC should accept this project or not. (3 marks)
5. Past experience suggests that four years should be used in the method for the payback period. If so, should the investment be made?(6 marks)
6. What would your decision be if the profitability index and the internal rate of return are employed, respectively? (12 marks)

Question 2 (50 marks)

Natural Food Limited is considering setting up a new farm. It is expected that the farm will generate annual after-tax net cash flows of $8,400,000 in perpetuity, with an initial outlay of $30,000,000. Currently, the corporate tax rate is 16% and Natural Food Limited is financed as follows:
– Retained earnings of $15,000,000
– 1,000,000 ordinary shares with a par value of $1, currently trading at $15 each. The dividend for the

last year was \$0.8, with an annual dividend growth rate of 2%.
– 50,000 shares of 6% preferred stock (with a \$100 par value), now selling for \$250 per share
– 40,000 8.5% 10-year coupon bonds with a par value of \$2,000 and currently trading at 102% of par. Coupons are payable semi-annually.
– A long-term bank loan of \$45,000,000 at 4%.

Required

1. When the weighted average cost of capital (WACC) is used by financial managers to evaluate investment decisions, the assumptions underlying the WACC should be taken into consideration. Please discuss these assumptions. (15 marks)
2. Determine the weighted average cost of capital for Natural Food Limited. (35 marks)