LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

B.Com. DEGREE EXAMINATION – **HONOURS**

SIXTH SEMESTER – **APRIL 2022**

UBH 6502 – ADVANCED FINANCIAL MANAGEMENT

Date: 15-06-2022 Dept. No. Max. : 100 Marks
Time: 09:00 A.M. - 12:00 NOON

PART A

Answer the following questions **(1 x 50 = 50)**

1. Chikepe Co is a large listed company operating in the pharmaceutical industry with a current market value of equity of $12,600 million and a debt to equity ratio of 30:70, in market value terms. Institutional investors hold most of its equity shares. The company develops and manufactures antibiotics and anti-viral medicines. Both the company and its products have an established positive reputation among the medical profession, and its products are used widely. However, its rate of innovation has slowed considerably in the last few years and it has fewer new medical products coming into the market.

   At a recent meeting of the board of directors (BoD), it was decided that the company needed to change its current strategy of growing organically to one of acquiring companies ,in order to maintain the growth in its share price in the future. The members of the BoDhad different opinions on the type of acquisition strategy to pursue.

   Director A was of the opinion that Chikepe Co should follow a strategy of acquiring companies in different business sectors. She suggested that focusing on just the pharmaceutical sector was too risky and acquiring companies in different business sectors will reduce this risk.

   Director B was of the opinion that Director A's suggestion would not result in a reduction in risk for shareholders. In fact, he suggested that this would result in agency related issues with ChikepeCo's shareholders reacting negatively and as a result, the company's share price would fall. Instead, Director B suggested that Chikepe Co should focus on its current business and acquire other established pharmaceutical companies. In this way, the company will gain synergy benefits and thereby increase value for its shareholders.

   Director C agreed with Director B, but suggested that Chikepe Co should consider relatively new pharmaceutical companies, as well as established businesses. In her opinion, newer companies might be involved in research and development of innovative products, which could have high potential in the future. She suggested that using real options methodology with traditional investment appraisal methods such as net present value could help establish a more accurate estimate of the potential value of such companies.

   The company has asked its finance team to prepare a report on the value of a potential target company, Foshoro Co, before making a final decision.

   Foshoro Co

   Foshoro Co is a non-listed pharmaceutical company established about 10 years ago. Initially Foshoro Co grew rapidly, but this rate of growth slowed considerably three years ago, after a venture capital equity backer exited the company by selling its stake back to the founding directors. The directors had to raise substantial debt capital to buy back the equity stake.

   The company's current debt to equity ratio is 60:40. This high level of gearing means that the company will find it difficult to obtain funds to develop its innovative products in the future.

   The following financial information relates to Foshoro Co:

   <u>Extract from the most recent statement of profit or loss</u>

	$ million
Sales revenue	878.1
Profit before interest and tax	192.3
Interest	78.6
Tax	22.7
Profit after tax	91.0

In arriving at the profit before interest and tax, Foshoro Co deducted tax allowable depreciation and other non-cash expenses totalling $112.0 million. It requires a cash investment of $98.2 million in non-current assets and working capital to continue its operations at the current level.

Three years ago, FoshoroCo's profit after tax was $83.3 million and this has been growingsteadily to their current level. FoshoroCo's profit before interest and tax and its cash flows grew at the same growth rate as well. It is likely that this growth rate will continue for the foreseeable future if Foshoro Co is not acquired by Chikepe Co. FoshoroCo's cost of capital has been estimated at 10%.

Combined company: Chikepe Co and Foshoro Co

Once Chikepe Co acquires Foshoro Co, it is predicted that the combined company's sales revenue will be $4,200 million in the first year, and its operating profit margin on sales revenue will be 20% for the foreseeable future.

After the first year, the sales revenue is expected to grow at 7% per year for the following three years. It is anticipated that after the first four years, the growth rate of the combined company's free cash flows will be 5.6% per year.

The combined company's tax allowable depreciation is expected to be equivalent to the amount of investment needed to maintain the current level of operations. However, as thecompany's sales revenue increases over the four-year period, the combined company willrequire an additional investment in assets of $200 million in the first year and then $0.64per $1 increase in sales revenue for the next three years.

It can be assumed that the asset beta of the combined company is the eighted average of the individual companies' asset betas, weighted in proportion of the individual companies'value of equity. It can also be assumed that the capital structure of the combined company remains at ChikepeCo's current capital structure level, a debt to equity ratio of 30:70.

Chikepe Co pays interest on borrowings at a rate of 5.3% per annum.Chikepe Co estimates that it will be able to acquire Foshoro Co by paying a premium of 30%above its estimated equity value to FoshoroCo's shareholders.

Other financial information

	Equity beta	*Asset beta*
Chikepe Co	1.074	0.800
Foshoro Co	2.090	0.950

The current annual government borrowing base rate is 2% and the annual market risk premium is estimated at 7%. Both companies pay tax at an annual rate of 20%.

Chikepe Co estimates equity values in acquisitions using the free cash flow to firm method.

Future acquisitions

The BoD agreed that in the future it is likely that Chikepe Co will target both listed and non listed companies for acquisition. It is aware that when pursuing acquisitions of listed companies, the company would need to ensure that it complied with regulations such as the mandatory bid rule and the principle of equal treatment to protect shareholders. The BoD is also aware that some listed companies may attempt to defend acquisitions by employing anti-takeover measures such as poison pills and disposal of crown jewels.

Required:

(a)Distinguish between a management buy-out (MBO) and a management buy-in (MBI), (5 marks)

(b)Discuss the different synergy benefits that may arise from acquisition? (5 marks)

(c) Prepare a report for the board of directors of Chikepe Co which:

(i) Estimates the current equity value of Foshoro Co (8 marks)

(ii) Estimates the equity value arising from combining Foshoro Co with Chikepe Co. (13 marks)

(iii) Evaluates whether the acquisition of Foshoro Co would be beneficial to ChikepeCo's shareholders and discusses the limitations of the valuation method used in (c)(i) and (c)(ii) above. (7 marks)

(c) Professional marks will be awarded in part (c) for the format, structure and presentation of the report. (4 marks)

(d) Discuss how the mandatory bid rule and the principle of equal treatment protects shareholders in the event of their company facing a takeover bid, and discuss the effectiveness of poison pills and disposal of crown jewels as defensive tactics against hostile takeover bids. (8 marks)

(Total: 50 marks)

PART-B

Answer ALL the question **(2x25=50)**

2. Barbarie Co, a large listed company based in Europe, is expecting to borrow €22,000,000 in four months' time on 1 May 20X2. It expects to make a full repayment of the borrowed amount nine months from now. Currently there is some uncertainty in the markets, with higher than normal rates of inflation, but an expectation that the inflation level may soon come down. This has led some economists to predict a rise in interest rates and others suggesting an unchanged outlook or maybe even a small fall in interest rates over the next six months.

   Although Barbarie Co is of the opinion that it is equally likely that interest rates could increase or fall by 0.5% in four months, it wishes to protect itself from interest rate fluctuations by using derivatives. The company can borrow at ESTER plus 80 basis points and ESTER is currently 3.3%. The company is considering using interest rate futures, options on interest rate futures or interest rate collars as possible hedging choices

   The following information and quotes from an appropriate exchange are provided on Euro futures and options. Margin requirements may be ignored.

   Three month Euro futures, €1,000,000 contract, tick size 0.01% and tick value €25.

March	96.27
June	96.16
September	95.90

   Options on three month Euro futures, €1,000,000 contract, tick size 0.01% and tick value€25. Option premiums are in annual %.

Calls			**Strike**	**Puts**		
March	*June*	*September*		*March*	*June*	*September*
0.279	0.391	0.446	96.00	0.006	0.163	0.276
0.012	0.090	0.263	96.50	0.196	0.581	0.754

   It can be assumed that settlement for both the futures and options contracts is at the end of the month. It can also be assumed that basis diminishes to zero at contract maturity at a constant rate and that time intervals can be counted in months.

   Required:

   (a) Briefly discuss the main advantage and disadvantage of hedging interest rate risk using an interest rate collar instead of options. (5 marks)

   (b) Based on the three hedging choices Barbarie Co is considering and assuming that the company does not face any basis risk, recommend a hedging strategy for the €22,000,000 loan. Support your recommendation with appropriate comments and relevant calculations in €. (20 marks)

3. **DUCTON PLC**

Ducton plc is a listed company with divisions which manufacture cars, motorbikes and cycles. Over the last few years, Ducton plc has used a mixture of equity and debt finance for its investments. However, it is about to make a new investment of $150 million in facilities to produce electric cars, which it proposes to finance solely by debt finance.

Project information

Ducton plc's finance director has prepared estimates of the post-tax cash flows for the project, using a four-year time horizon, together with the realisable value at the end of four years:

Year	*1*	*2*	*3*	*4*
	$m	$m	$m	$m
Post-tax operating cash flows	28.50	36.70	44.40	50.90
Realisable value				45.00

Working capital of $6 million, not included in the estimates above and funded from retained earnings, will also be required immediately for the project, rising by the predicted rate of inflation for each year. Any remaining working capital will be released in full at the end of the project.

Predicted rates of inflation are as follows:

Year	*1*	*2*	*3*	*4*
	8%	6%	5%	4%

The finance director has proposed the following finance package for the new investment:

	$m
Bank loan, repayable in equal annual instalments over the project's life, interest payable at 8% per year	70
Subsidised loan from a government loan scheme over the project's life on which interest is payable at 3.1% per year	80
	150

Issue costs of 3% of gross proceeds will be payable on the subsidised loan. No issue costs will be payable on the bank loan. Issue costs are not allowable for tax.

Financial information

Ducton plc pays tax at an annual rate of 30% on profits in the same year in which profits arise.

Ducton plc's asset beta is currently estimated at 1.14. The current return on the market is estimated at 11%. The current risk-free rate is 4% per year.

Ducton plc's chairman has noted that all of the company's debt, including the new debt,will be repayable within three to five years. He is wondering whether Ducton plc needs to develop a longer term financing policy in broad terms and how flexible this policy should be.

Required:

(a) Calculate the adjusted present value (APV) for the project and conclude whether the project should be accepted or not. (20 marks)

(b) Discuss the factors which may determine the long-term finance policy which Ducton plc's board may adopt and the factors which may cause the policy tochange.