BIRLA INSTITUTE OF TECHNOLOGY AND SCIENCE, PILANI - K. K. BIRLA GOA CAMPUS
First Semester 2022-23, Comprehensive Examination
Course Title: Financial Management **Course No.:** ECON F315, FIN F315
Examination Date: 30-12-2022 (FN) **Max Marks: 45**

Section –A (25 marks)

Q.1) Well to do Ltd. has provided the following information and requested you to calculate the cash conversion cycle (CCC)

Sales: Rs. 3640 lacs of which 20% is cash sales. G/P ratio 20%,

60% of COGS is raw material consumed , 10% depreciation and the balance is cash expenses .All purchases are on credit.

	At the beginning of the year Rs in lacs	End of the year Rs in lacs
Stock of finished goods	82	68
Stock of Raw material	42	36
Accounts Receivable	94	102
Accounts payable for goods	49	37
Payable for expenses	18	16

(3 Marks)

Q.2) A manufacturing company has a expected usage of 50,000 units of a certain item during the next year. Unit cost is Rs 5 . The cost of processing an order is Rs 20. Carrying cost per annum is Rs 0.10 per unit for storage and 8% interest towards interest. Lead time of an order is 5 days and the company will keep a reserve supply of two days' usage.

Calculate: a) The Economic Order Quantity b) The Re-order point c) Time gap between two orders.
(Assume 250-day year) **(2 Marks)**

Q.3) GSL Ltd. provided the following information and requested you to compute the upper control limit (UCL) and return point (RP) with the adoption of Miller and Orr Model.

- Standard deviation of company's daily cash flow Rs. 1, 00,000.
- The annual yield on marketable securities is 12%.
- It maintains a minimum cash balance of Rs. 3, 00,000.
- Cost of buying or selling marketable security is Rs. 1500 per transaction. **(2 Marks)**

Q.4) Go Easy Ltd. is contemplating to liberalize its collection efforts. Its present sales are Rs. 100 lakhs, its average collection period is 30 days, its expected variable cost to sales ratio is 75 per cent and its bad debt ratio is 5%. The company's cost of capital is 10 per cent and tax rate is 30 per cent. The proposed liberalization is collection effort increases sales to Rs. 120 lakhs, increases average collection period, by 15 days, and increases the bad debt ratio to 7%. Determine the residual income

(3 Marks)

Q.5). Finman Ltd. Sells goods in domestic market at a price which is cash cost plus one third. Not counting depreciation as a part of the cost of goods sold its estimates for the next year are as follow.

Rs in lakhs

Sales- Home at One month's credit	1400
Export at 3 months credit, selling price 10% below home price	720
Material used (Suppliers extend 2 month's credit)	450
Wages paid, ½ month in arrear	360
Manufacturing expenses paid, one month in arrear	540
Administrative expenses one month in arrear	170
Sales promotion expenses -payable quarterly in advance	60
Packing material 1. 5 months credit	70

Company keeps one months stock of finished goods , 2 month stock of raw materials and half a month stock of packing material. Production cycle is half a month WIP is valued at factory cost taking 100% of material cost and half of other expenses. Company has to maintain a minimum cash balance of Rs 20 lakhs.

a. Assuming 20% safety margin calculate the working capital requirement.
b. If the bank stipulates the following margin what is the maximum permissible bank finance ? Raw material and packing material 25% of the net holding, 50% of home receivable and zero % of export receivable **(7 Marks)**

Q.6) A Company wants to buy a new machine to replace one which is having frequent breakdown. It received offers for two models M_1 and M_2. Further details regarding these models are given below:

	M_1	M_2
Installed capacity (units)	10,000	10,000
Fixed overhead per annum (Rs.)	2, 40,000	1,00,000
Estimated profit at the above capacity (Rs.)	1, 60,000	1,00,000

The product manufactured using this type of machine (M_1 or M_2) is sold at Rs. 100 per unit. You are required to determine:

(a) Break even level of sales for each model.
(b) The level of sales at which both the models will earn the same profit.
(c) The model suitable for different levels of demand for the product. **(4 Marks)**

Q.7) Easy lease Limited has decided to lease an equipment to X Ltd. The Cost of the equipment is Rs 50 lakhs. The equipment is expected to have an useful life of 6 years and a scrap value of Rs 4 lakhs. Tax rate is 25% . Depreciation is at 20% on WDV basis. If the expected return of Easy Lease Limited is 12%. Calculate the yearly lease rental to be charged to X Ltd. Consider the tax implication of the scrap. **(4 Marks)**

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Section –B (20 marks)

Q.8) As a treasury analyst at Imperial Ltd. (IL), you are trying to value a potential target company Sunrise Ltd. (SL). The corporate tax rate is 25%. The cost of capital is 10% p.a. EAR. The Table I provides the projections of parameters of income statement and balance sheet for SL Ltd. (All values in Rs. Million). Table I

Table I –Years	**Year 0**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**
1. Sales Revenues		400	425	450	450	350
2. Cost of goods sold		175	181	187	187	162
3. Operating expenses (excl. depreciation)		50	50	50	50	50
4. Depreciation and Amortization expense		8	10	12	12	15
5. Change in Operating Net Working capital		50	250	0	0	-100
6. Net Fixed assets	80	100	120	130	160	150

The comparable companies data is provided below:-

Table II (Values of EV and Sales revenue are in Rs. Million)

Company name	Enterprise value	Sales revenue	EBITDA margin
AL Ltd,	400	100	15%
BL Ltd.	550	150	20%

The industry uses an EV/EBITDA ratio as multiple.

The analyst used the average industry multiple (2 firms in Table II) to calculate the Terminal value at the end of Year 5. SL Ltd. also has bonds outstanding (SL Ltd. had raised money through the issuance of bonds at t=0). The time to maturity of the bonds is 8 years. The bond coupon rate is 6% p.a. compounded semi-annually. These are semi-annual fixed coupon bonds. The par value of the bond is Rs.1000. The YTM of the bond is a 3.41% semi-annual rate. The number of bonds outstanding is 10 million bonds. (Market value of bond is Price of the bond times no. of bonds outstanding). Cash in the books is 10 million Rs.

3.1 What are the planning period cash flows FCFF (1-5 years)? [2 MARKS]

3.2 What is the Terminal value of the target company end of Year 5? [2 MARKS]

3.3 What is the value of the firm at Year 0? [1 MARK]

3.4 What is the value of the bonds issued? [1.5 MARKS]

3.5 If the number of shares outstanding is 100 million shares, what is the share price of Sunrise Ltd. (SL)? [1.5 MARKS]

Q.9) The intern from a reputed institute is given the task of analyzing two mutually exclusive projects proposals at the Headquarters of H.E.C. Ltd. (A heavy engineering company). It had two plants; one at Ranchi (referred to as Plant R); the other at Bokaro (referred to as Plant B). The plant managers of the two plants had submitted proposals related to the expansion of their respective plants. The proposals provided incremental benefits in terms of cash flow projections from the expansion of their respective plants. However, H.E.C. Ltd. could take up only one of the two projects for expansion currently as with expanding only one of the two projects, it will be able to meet the demand for heavy machinery.

The cash flow projections of the two proposals are provided in Table I. The initial outlay for Plant R expansion would be ₹200 million and for Plant B would be ₹410 million. The benefit in terms of cash flows for Plant R would be ₹50 million starting from Year 1 and will grow at a growth rate of 5% till perpetuity and for Plant B it will be ₹ 100 million also growing at a rate of 5% till perpetuity from Year 1 onwards.

Table I

Plant	T=0	T=1 till perpetuity with a growth rate of g=5%
Plant R	-₹ 200	₹ 50
Plant B	-₹ 410	₹ 100
*All values in Rs. millions		

The cost of capital was not known. The main task of the intern was to find out the cost of capital for which HEC Ltd. would be indifferent between choosing any of the two projects. What is the cross-over rate, the IRRs and what should the intern suggest regarding investment decision; provide the overall solution? [3 MARKS]

Q.10)

Rovio Brothers, a game manufacturer, has a new idea for an adventure game. It can market the game as a traditional board game, a DVD video game, and an app-based game. These are **not** mutually exclusive. However, there is a budget constraint of US $20,000 for the investment. Consider the following cash flows for the three projects for Rovio Brothers. Assume that the discount rate for the Rovio brothers is 10%. It is a five-year project. The cash flows projected and investment amount at Year 0 is provided in Table.

Which ways should Rovio Brothers market the game, consider a budget constraint of US $20,000 and why?

Year	Board Game ($)	DVD video game ($)	App-based game ($)
0	-10000	-10000	-20000
1	3000	5000	7000
2	4500	4000	8000
3	5000	3000	9000
4	5000	4000	5000
5	6000	2000	5000

[2 MARKS]

Q.11)

As a treasury analyst at *Curie Chemicals Ltd*. (CCL), you are trying to value a potential target company *Isotopic Labs Ltd*. (ILL), a privately held company. The capital structure ratio (D/E) currently for CCL Ltd. is 60%, and ILL is 25%. The treasury analyst looked for comparable cos. in the market, Table below summarizes the information on the comparable cos.

Company	Beta equity	D/E

Alc Labs Ltd.	20% less volatile than the market index	20%
Surge Chemicals Ltd.	150% more volatile than the market index	40%

The corporate tax rate is 33%. The slope of the security market line (SML Line) is 6%. The beta of debt is negligible. The yield to maturity of the government bond is 3.5% p.a.

The FCFF projections are Rs. 250 million for Year 1, growing at 5% per annum from Year 1 to Year 4 (i.e. 1-2, 2-3, 3-4). Beyond four years, the retention ratio will be 30% and the return on invested capital is 10%. The retention ratio and return on assets will continue to be the same every year till perpetuity from Year 4 onwards. The existing debt outstanding is Rs. 4000 million (considered a perpetual debt). The bond rating is B. The direct and indirect expected cost of bankruptcy is assumed to be 40% of the unlevered firm value.

Bond-rating	Default rate
B-	32.5%
B	26.36%

5.1 What is the cost of capital (as if the firm was unlevered; R0) for ILL Ltd.?
5.2 What is the value of unlevered firm ILL Ltd.?
5.3 What is the present value of interest –tax shields for ILL Ltd.?
5.4 What is the present value of bankruptcy cost for ILL Ltd.?

[4X1 = 4]

Q.12)

Each part below is a standalone question:
a. (1 Mark) Briefly explain the pecking order theory of capital structure
b. (1 Mark) Briefly explain why dividend policy may not be irrelevant in the real (non-Miller Modigliani) world.
c. (1 Mark) Why does cost of debt increase with increase in debt/equity ratio? Do you expect the WACC to increase with increase in debt/equity ratio? Plot WACC against debt financing to elaborate.

************Good Luck*******************