

PUSASQF603B
Financial Modelling using Excel

Time: 2 hours Total
Marks: 60 marks

Note:

1. The candidate has option to either attempt question 4A or question 4B. Rest all questions are mandatory.
2. Numbers to the right indicate full marks.
3. The candidates will be provided with the formula sheet and graph papers [if required] for the examination.
4. Use of approved scientific calculator is allowed.
5. The folder should be named as follows: 701_FMExcel (or according to your Roll no).
6. folder must include the Excel files

Q1. Answer the Following

15 Marks

A.

5 Marks

Hind Lever Company is considering a new product line to supplement its range of products. It is anticipated that the new product line will involve cash investments of Rs 7,00,000 at time 0 and Rs 10,00,000 in year 1. After-tax cash inflows of Rs 2,50,000 are expected in year 2, Rs 3,00,000 in year 3, Rs 3,50,000 in year 4 and Rs 4,00,000 each year thereafter through year 10. Although the product line might be viable even after year 10, the company prefers to be conservative and end all calculations at that time.

- a) If the required rate of return is 15%, COMPUTE net present value of the project. Is it acceptable?
(3)
- b) Analyse what would be the case if the required rate of return were 10%.
(2)

B.

5 Marks

Hind Lever Company is considering a new product line to supplement its range of products. It is anticipated that the new product line will involve cash investments of Rs 7,00,000 at time 0 and Rs 10,00,000 in year 1. After-tax cash inflows of Rs 2,50,000 are expected in year 2, Rs 3,00,000 in year 3, Rs 3,50,000 in year 4 and Rs 4,00,000 each year thereafter through year 10. Although the product line might be viable even after year 10, the company prefers to be conservative and end all calculations at that time.

- a) Calculate its internal rate of return.
(3)
- b) Compute the Payback Period of the project.
(2)

C.

5 Marks

ABC Ltd. is a small company that is currently analyzing capital expenditure proposals for the purchase of equipment; the company uses the net present value technique to evaluate projects. The capital budget is limited to Rs 10,00,000 which ABC Ltd. believes is the maximum capital it can raise. The initial investment and projected net cash flows for each project are shown below. The cost of capital of ABC Ltd is 12%. You are required to COMPUTE the NPV of the different projects. Also perform sensitivity analysis if discount rate moves by 0.5%.

	Project A	Project B	Project C	Project D
Initial Investment->	4,00,000	4,20,000	4,50,000	5,00,000
Projected Cash Flow				
Year 1	1,10,000	80,000	1,40,000	1,50,000
Year 2	1,10,000	90,000	1,50,000	1,40,000

Year 3	1,10,000	1,10,000	1,20,000	1,20,000
Year 4	1,10,000	1,25,000	1,60,000	90,000
Year 5	1,10,000	2,00,000	2,00,000	75,000

Q2. Answer the Following

15 Marks

Following is the income statement of PQR Ltd:

Particulars	FY 25	FY 26	FY 27	FY 28	FY 29
Revenue from Operations	1,45,60,000	1,78,55,000	2,19,00,000	2,70,00,000	3,37,60,000
Other Income	8,00,000	6,50,000	4,20,000	8,40,000	9,00,000
Total	1,53,60,000	1,85,05,000	2,23,20,000	2,78,40,000	3,46,60,000
Less: COGS	97,35,000	1,25,25,000	1,47,00,000	1,78,00,000	2,13,45,000
EBIDTA	56,25,000	59,80,000	76,20,000	1,00,40,000	1,33,15,000
Less: Depreciation	3,50,000	3,30,000	3,10,000	2,70,000	2,50,000
Less: Interest (10%)	2,50,000	2,50,000	2,50,000	1,00,000	1,00,000
EBT	50,25,000	54,00,000	70,60,000	96,70,000	1,29,65,000
Less : Tax (20%)	10,05,000	10,80,000	14,12,000	19,34,000	25,93,000
Profit after Tax	40,20,000	43,20,000	56,48,000	77,36,000	1,03,72,000
Less : Dividend Paid	2,50,000	2,75,000	3,02,500	3,32,750	3,66,025
Net Income	37,70,000	40,45,000	53,45,500	74,03,250	1,00,05,975

Extracts of Balance Sheet:

Particulars	FY 25	FY 26	FY 27	FY 28	FY 29
Equity Share Capital	2,50,000	2,50,000	2,50,000	2,50,000	2,50,000
Reserves & Surplus	37,70,000	78,15,000	1,31,60,500	2,05,63,750	3,05,69,725
Borrowings	25,00,000	25,00,000	25,00,000	10,00,000	10,00,000
Cash Bank	1,75,47,000	2,65,47,000	3,44,92,800	4,69,42,800	5,38,18,200

Other Information:

No. of Shares	25,000	25,000	25,000	25,000	25,000
MPS	210	242	258	289	342

A.

5 Marks

Calculate the following for all years (upto 2 decimal):

a) P/E Ratio

(2)

b) Price to Sales Ratio

(2)

c) EV/EBIDTA

(1)

B.

5 Marks

Calculate the following for all years (upto 2 decimal):

a) Dividend Yield

(3)

b. Price to Book Value
(2)

C. 5 Marks

- i. Calculate Free Cash Flow to Equity (FCFF) for all years using Profit Before Tax as base (assuming no working capital and fixed investment, Depreciation is the only non cash item and Interest is paid to borrowers , so consider interest net of tax while calculating FCFF) (3)
- ii. Compute WACC for PQR Ltd assuming there are two sources- Debt and Equity (Risk Free Rate 4.5%, Beta – 0.9 and Market Return is 12%) (2)

Q2. Answer the Following**30 Marks****A.****30 Marks**

Bran started a business of trading in shoe of two type - Sports Shoes for Athlete and Formal Shoes for Corporate customers. Using following information, please fill the missing values wherever “REQ” is mentioned for the projected financials statements:

Balance Sheet

Particulars	FY 25	FY 26	FY 27	FY 28	FY 29	FY 30
I. ASSETS						
A. Non Current Assets						
a. Properties, Plants & Equipment	73,25,000	63,16,200	REQ	REQ	45,02,400	REQ
b. Long Term Investments	9,60,000	REQ	9,60,000	REQ	REQ	6,10,000
<i>Total Non - Current Assets</i>	82,85,000	72,76,200	69,49,800	REQ	51,12,400	45,18,000
B. Current Assets						
a. Inventory	48,70,000	REQ	1,82,40,000	REQ	3,46,20,000	REQ
b. Trade Receivables	REQ	REQ	1,17,200	REQ	1,37,800	REQ
c. Cash & Bank Balances	19,18,200	20,47,300	5,00,300	REQ	47,47,300	REQ
d. Other Current Assets	-	21,00,000	REQ	47,57,800	68,57,800	1,14,90,200
<i>Total Current Assets</i>	REQ	REQ	2,30,43,200	3,33,17,200	REQ	6,38,75,890
Total Assets	REQ	REQ	REQ	REQ	REQ	REQ
II. EQUITIES & LIABILITIES						
A. Equity						
a. Share Capital	50,00,000	50,00,000	50,00,000	REQ	50,00,000	50,00,000
b. Reserves & Surplus	25,21,200	REQ	REQ	2,05,76,400	REQ	REQ
<i>Total Equities</i>	75,21,200	REQ	REQ	REQ	REQ	REQ
B. Non Current Liabilities						
a. Long Term Loan	60,00,000	68,00,000	REQ	44,00,000	REQ	REQ
<i>Total Non Current Liabilities</i>	60,00,000	68,00,000	REQ	44,00,000	REQ	REQ

C. Current Liabilities						
a. Trade Payables	19,77,000	41,50,000	REQ	96,50,000	REQ	1,69,78,000
b. Other Current Liabilities	-	1,81,800	REQ	2,92,000	1,87,600	72,700
<i>Total Current Liabilities</i>	19,77,000	REQ	REQ	99,42,000	REQ	1,70,50,700
Total Equities & Liabilities	REQ	REQ	REQ	REQ	REQ	REQ

Income Statement

Particulars	FY 25	FY 26	FY 27	FY 28	FY 29	FY 30
Revenue from Operations	REQ	2,66,30,000	REQ	4,03,90,000	REQ	REQ
Other Income	6,00,000	7,20,000	8,40,000	12,00,000	REQ	5,00,000
Total	REQ	REQ	REQ	REQ	REQ	REQ
Less: COGS	1,49,00,000	REQ	REQ	REQ	3,24,50,000	REQ
Gross Profit	REQ	REQ	REQ	REQ	REQ	REQ
Less: SG&A	REQ	7,53,000	REQ	11,46,600	REQ	17,85,600
EBIDTA	REQ	REQ	REQ	REQ	REQ	REQ
Less: Depreciation	11,75,000	10,08,800	REQ	7,98,600	REQ	5,94,400
Less: Interest	REQ	5,44,000	4,48,000	3,52,000	96,000	-
EBT	REQ	REQ	REQ	REQ	REQ	REQ
Less : Tax	REQ	REQ	REQ	REQ	REQ	REQ
Profit after Tax	REQ	REQ	REQ	REQ	REQ	REQ
Less : Dividend Paid	10,00,000	REQ	12,10,000	REQ	14,64,100	16,10,510
Net Income	REQ	REQ	REQ	REQ	REQ	REQ

Other Information

- Sports shoe sale will be 5,000 unit at Rs 3,500 in year 1. The unit will increase at 15% and sale price will increase at 8% thereafter
- Formal shoe sale will be 1,500 unit at Rs 2,500 in year 1. The unit will increase at 12% and sale price will increase at 8% thereafter
- Sports shoe purchase will be 6,500 unit at Rs 2,500 in year 1. The unit will increase at 14% in year 2 and year 3 and 10% thereafter. The sale price will increase at 8% year on year
- Formal shoe purchase will be 2,200 unit at Rs 1,600 in year 1. The unit will increase at 13% and sale price will increase at 8% thereafter
- Out of total Sales of Shoes, 98% will be in cash and 2% will be on Credit.
- Out of total purchases of shoes, 90% will be in cash and 10% will be on Credit.
- Closing unit to be valued at current years purchase price
- Round off Unit and Price for Sale and Purchase of items to 2 decimal (i.e. put -2 in roundoff formula)
- Sales Commission on Sports Shoes is 2% of Sale from Sports shoes and on Formal Shoes it is 1% on sales from Formal Shoes
- Other Operating Expenses are 1% of total revenue from Sale of both shoes
- Tax Rate is 25% for all year

- Machinery worth Rs 65 lac was purchased in year 1 - Depreciated at 15% pa as per WDV Method and Furniture worth Rs 20 lac purchased in Year 1 and additional of Rs 6 lac in Year 3- Depreciated at 10% wdv method. All purchases made on 1st day of respective year. (Round off depreciation to -2 in formula)
- The Company purchased 12,000 shares of X Ltd in year 1 at Rs 80 per share. The Company further purchased 3,000 shares in FY 28 at Rs 150 per share. The Company further sold 10,000 shares at Rs 170 in FY 29. The shares were purchased/sold at start of relevant FY. The shares were sold on FIFO basis
- Dividend Income on investment will be Rs 50 in year 1 and will increase by 10% thereafter. (Round off Dividend Per Share income to -1). The dividend on shares were realised in cash and to be recorded in Other Income. Also, the gain/loss on sale to be appropriately recognised in P&L.
- Company availed loan from HDFC @ 8% interest rate for Rs 60 lac. The loan will be paid in 5 equal annual instalment from start of year 2.
- Company also availed loan from Axis Bank @ 8% interest rate for Rs 60 lac in FY 26 which was fully repaid on 1st day of in FY 29
- Company issued 5 lac equity shares at rs 10 each fully paid up. No further shares issued.
- The dividend declared in year 1 is Rs 2 per share and is expected to increase by 10%. (Round off the Dividend per share to positive 1 in formula)
- The Reserves would be accumulated for all years.
- Other Working Capital:

Following are the schedule of recoveries from and payments to outstanding creditors and trade receivables (Please note that this is not the closing balance):

Particulars	FY 25	FY 26	FY 27	FY 28	FY 29	FY 30
Trade Receivables	-	6,00,000	9,00,000	7,50,000	10,50,000	11,50,000
Trade Payables	-	2,50,000	3,50,000	5,50,000	7,50,000	9,50,000

Basis above and also on the basis of %age of total sales/purchase on credit, closing balances can be ascertained for Trade Receivables and Trade Payables

Other Closing Balances are as follows :

Particulars	FY 25	FY 26	FY 27	FY 28	FY 29	FY 30
Cash & Bank Balances	19,18,200	20,47,300	5,00,300	22,04,400	47,47,300	78,72,690
Other Current Assets	-	21,00,000	41,85,700	47,57,800	68,57,800	1,14,90,200
Other Current Liabilities	-	1,81,800	2,20,200	2,92,000	1,87,600	72,700

- A. Please fill the required cells in Balance Sheet and Income Statement as per projections (20)
- B. Prepare the projected Cash Flow for FY 28 and FY 29 – only for Cash Flow from Financing Activities (10)

OR

Q3.B**30 Marks**

A. Choose the correct options for the following sub questions :

1. For a company for which the going-concern assumption is not valid, the most appropriate valuation approach would be to calculate its: **(1)**
 - A. residual income model value.
 - B. dividend discount model value.
 - C. liquidation value.
2. Which of the following is not one of the five elements of industry structure as developed by Professor Michael Porter? **(1)**
 - A. Bargaining power of Suppliers
 - B. Bargaining power of Government
 - C. Threats of Substitutes
 - D. Competitors rivalry
3. If the risk-free rate of return equals 10%. The firm's beta equals 1.75 and the return on the market portfolio equals to 15%. What is Cost of Equity? **(2)**
 - A. 17.50%
 - B. 18.75%
 - C. 26.25%
 - D. 18.25%
4. A Company has 50,000 debenture issued at 12% rate having face value of Rs 100 issued at Rs 96. If tax rate is 30%. What is Cost of Debt (Kd)? **(1)**
 - A. 8.00%
 - B. 8.40%
 - C. 12.00%
 - D. 8.75%
5. Given: risk-free rate of return = 5 %; market return = 10%; cost of equity = 15%; value of beta (β) is: **(2)**
 - A. 1.9
 - B. 1.8
 - C. 2.0
 - D. 2.2
6. Which of the following cost of capital requires to adjust taxes? **(1)**
 - A. Cost of Equity Share
 - B. Cost of Preference Shares
 - C. Cost of Debentures
 - D. Cost of Retained Earnings
7. A company has a financial structure where equity is 70% of its total debt plus equity. Its cost of equity is 10% and gross loan interest is 5%. Corporation tax is paid at 30%. What is the company's weighted average cost of capital (WACC)? **(2)**
 - A. 7.55%
 - B. 7.80%

- C. 8.70%
- D. 8.05%

8. Assume cash outflow equals Rs 1,20,000 followed by cash inflows of Rs 25,000 per year for 8 years and a cost of capital of 11%. What is the Net present value?

(2)

- A. Rs (38,214)
- B. Rs 9,653
- C. Rs 8,653
- D. Rs 38,214

9. Interest received on Loan given to another company will be recorded under which activity of Cash Flow Statement? (1)

- A. Operating Activities
- B. Financing Activities
- C. Investing Activities
- D. None of the above

10. What is the Internal rate of return for a project having cash flows of Rs 40,000 per year for 10 years and a cost of Rs 2,26,009?

(2)

- A. 9%
- B. 10%
- C. 11%
- D. 12%

B. X Limited is considering purchasing of new plant worth Rs 80,00,000. The expected net cash flows after taxes and before depreciation are as follows:

Year	Net Cash Inflow
1	14,00,000
2	14,00,000
3	14,00,000
4	14,00,000
5	14,00,000
6	16,00,000
7	20,00,000
8	30,00,000
9	20,00,000
10	8,00,000

- i. Calculate Payback Period of the project (2)
- ii. Calculated net present value at 10% discounting factor (2)
- iii. Calculate Internal Rate of Return.

(3)

C. Following table depicts the projected income statement of Alpha Ltd:

Particulars	FY 24	FY 25	FY 26	FY 27	FY 28	FY 29	FY 30
Revenue	1,24,00,000	1,38,88,000	1,55,54,560	1,74,21,107	2,09,05,329	2,50,86,394	3,01,03,673
Other Income	36,00,000	40,00,000	44,00,000	48,00,000	52,00,000	56,00,000	60,00,000
Total	1,60,00,000	1,78,88,000	1,99,54,560	2,22,21,107	2,61,05,329	3,06,86,394	3,61,03,673
Less: COGS	25,00,000	27,50,000	30,25,000	36,30,000	43,56,000	52,27,200	62,72,640
Gross Profit	1,35,00,000	1,51,38,000	1,69,29,560	1,85,91,107	2,17,49,329	2,54,59,194	2,98,31,033
Less: SG&A	25,24,000	39,94,400	51,33,728	64,61,255	87,00,106	1,07,03,666	1,30,37,660
EBIDTA	1,09,76,000	1,11,43,600	1,17,95,832	1,21,29,852	1,30,49,222	1,47,55,529	1,67,93,373
Less: Interest	-	-	10,50,000	10,50,000	9,00,000	9,00,000	9,00,000
Less: Depreciation	6,25,000	5,43,750	4,73,438	4,12,547	3,59,777	3,14,012	2,74,291
EBT	1,03,51,000	1,05,99,850	1,02,72,395	1,06,67,305	1,17,89,445	1,35,41,517	1,56,19,082
Less : Tax	25,25,250	25,87,463	25,68,099	26,66,826	29,47,361	33,85,379	39,04,771
Net Income	78,25,750	80,12,388	77,04,296	80,00,479	88,42,084	1,01,56,138	1,17,14,312

Other Information:

- The Company has availed 2 loan - one at 8% interest and other at 12% interest. These two debts are in ratio of 1:4
- The debt to equity ratio is 1.5:1. And total equity share capital is Rs 40,00,000
- Tax rate is 20%
- The risk free interest rate is 7.5% and risk premium is 9% and the beta factor is 0.85
- Consider FY24 as Year 1 and FY 23 as year 0 in which Rs 550 lakhs were invested in the project

Required:

- Calculate WACC based on information given. (2)
- Calculate NPV of the total income using WACC. (2)
- If market return on equity reduces by 1% and risk free rate of return reduces by 0.5% and beta revised to 0.45, what will be the net NPV of the project? (4)