

PUSASQF603B
Financial Modelling using Excel

Time: 2 hours Total
Marks: 60 marks

Note:

1. The candidate has the option to either attempt question 3A or question 3B. 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

ABC 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 13,00,000 at time 0. After-tax cash inflows of Rs 50,000 are expected in year 1, Rs 1,50,000 in year 2, Rs 2,30,000 in year 3 and Rs 2,90,000 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 8 %, compute net present value of the project. Is it acceptable? (2)
- b) Analyse what would be the case if the required rate of return were 15 per cent. (1)
- c) Calculate its internal rate of return. (2)

B.

5 Marks

Following table depicts the projected income statement of Amber Ltd:

Particulars	FY 20	FY 21	FY 22	FY 23	FY 24	FY 25	FY 26
Revenue	75,00,000	1,00,00,000	1,18,50,000	1,41,50,000	1,68,50,000	2,08,50,000	2,68,50,000
Other Income	16,00,000	26,00,000	28,00,000	21,00,000	32,00,000	36,00,000	42,00,000
Total	91,00,000	1,26,00,000	1,46,50,000	1,62,50,000	2,00,50,000	2,44,50,000	3,10,50,000
Less: COGS	39,00,000	52,00,000	61,62,000	73,58,000	87,62,000	1,08,42,000	1,39,62,000
Gross Profit	52,00,000	74,00,000	84,88,000	88,92,000	1,12,88,000	1,36,08,000	1,70,88,000
Less: SG&A	75,000	1,00,000	1,18,500	1,41,500	1,68,500	2,08,500	2,68,500
EBIDTA	51,25,000	73,00,000	83,69,500	87,50,500	1,11,19,500	1,33,99,500	1,68,19,500
Less: Interest	8,96,000	8,96,000	8,96,000	8,96,000	8,96,000	8,96,000	8,96,000
Less: Depreciation	3,50,000	3,15,000	2,83,500	2,55,150	2,29,635	2,06,672	1,86,004

EBT	38,79,000	60,89,000	71,90,000	75,99,350	99,93,865	1,22,96,829	1,57,37,496
Less : Tax	7,75,800	12,17,800	14,38,000	15,19,870	19,98,773	24,59,366	31,47,499
Net Income	31,03,200	48,71,200	57,52,000	60,79,480	79,95,092	98,37,463	1,25,89,997

Other Information:

- The Company has availed 2 loans - one at 10% interest and other at 12% interest. These two debts are in ratio of 2:3
- The debt to equity ratio is 2:1. 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 8.5% and the beta factor is 0.50
- Consider FY20 as Year 1 and FY 19 as year 0 in which Rs 325 lakhs were invested in the project

Required:

- Calculate WACC based on information given (2)
- Calculate NPV of the total income using WACC (1)
- 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? (2)

C.

5 Marks

M Limited is considering purchasing of new plant worth Rs 65,00,000. The expected net cash flows after taxes and before depreciation are as follows:

Year	Net Cash Inflow
1	13,20,000
2	13,30,000
3	13,30,000
4	13,50,000
5	11,70,000
6	8,90,000
7	18,00,000
8	25,00,000
9	28,00,000
10	11,00,000

- Calculate Payback Period of the project (1)
- Calculated net present value at 12% discounting factor (2)
- Calculate Internal Rate of Return (2)

Q2. Answer the Following**15 Marks****A.****5 Marks**

Pros Ltd. is a company that is currently analyzing its internal project and wants to incur capital expenditure for the purchase of automated machinery; the company uses the net present value technique to evaluate projects. The capital budget is limited to Rs 12,00,000 which it 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 Pros Ltd is 11.5%.

	Project A	Project B	Project C	Project D
Initial Investment	6,50,000	7,50,000	8,70,000	7,90,000
Inflow				
Year 1	2,10,000	1,40,000	1,20,000	2,50,000
Year 2	2,10,000	1,52,000	1,80,000	1,80,000
Year 3	2,10,000	2,02,000	2,20,000	1,50,000
Year 4	2,10,000	2,97,000	2,60,000	1,20,000
Year 5	2,10,000	2,30,000	3,30,000	1,00,000

- Compute the NPV of the different projects. (4)
- Also perform sensitivity analysis if discount rate moves by 0.5%. (1)

B.**5 Marks**

- Calculate Free Cash Flow to Equity (FCFF) for all years using Profit Before Tax as base (assuming no working capital and fixed investment and Depreciation is the only non cash item and Interest is paid to borrowers , so consider interest net of tax while calculating FCFF). (3)

Income Statement

Particulars	FY 25	FY 26	FY 27	FY 28	FY 29
Revenue from Operations	2,09,66,400	2,57,11,200	3,15,36,000	3,88,80,000	4,86,14,400
Other Income	11,	9,36,000	6,04,800	12,09,600	12,96,000
Total	2,21,18,400	2,66,47,200	3,21,40,800	4,00,89,600	4,99,10,400
Less: COGS	1,78,21,440	2,18,54,520	2,68,05,600	3,30,48,000	4,13,22,240
EBIDTA	42,96,960	47,92,680	53,35,200	70,41,600	85,88,160
Less: Depreciation	7,00,000	6,60,000	6,20,000	5,40,000	5,00,000
Less: Interest (10%)	5,00,000	5,00,000	5,00,000	5,00,000	5,00,000
EBT	30,96,960	36,32,680	42,15,200	60,01,600	75,88,160
Less : Tax (20%)	6,19,392	7,26,536	8,43,040	12,00,320	15,17,632
Profit after Tax	24,77,568	29,06,144	33,72,160	48,01,280	60,70,528
Less : Dividend Paid	3,50,000	3,85,000	4,23,500	4,65,850	5,12,435
Net Income	21,27,568	25,21,144	29,48,660	43,35,430	55,58,093

- Compute WACC from above Income Statement assuming there are two sources- Debt and Equity and Debt equity structure is 1:2. (Risk Free Rate 7.5%, Beta – 0.75 and Market Return is 15%). (2)

C.**5 Marks**

- Compute the Current Value of Company's Share using Gordon Growth Model
Reliance Ltd recently paid dividend of Rs 15. The dividend rate is expected to grow at constant rate of 5%. The Risk Free rate is considered to be 7% and Market Return to be 14% and the beta of the firm to be 0.60. (2)
- If in sub question (i) above, growth rate is revised to 7% and beta is revised to 0.8, what will be the value of shares? (2)

- (iii) Compute the implied growth rate if Current price is Rs 900 and latest dividend paid is Rs 50 and required rate of return is Rs 14%. (1)

Q3. Attempt question 3A or question 3B.

15 Marks

A.

5 Marks

Ross started a business of trading in Office Furnitures- Office Chairs and Office Tables. Using following information, please fill the missing values 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 & Equipments	71,10,000	REQ	64,79,100	REQ	52,47,900	REQ
b. Long Term Investments	7,50,000	REQ	7,50,000	REQ	REQ	5,10,000
Total Non - Current Assets	REQ	71,49,000	REQ	REQ	REQ	REQ
B. Current Assets						
a. Inventory	REQ	32,40,000	REQ	REQ	48,96,000	REQ
b. Trade Receivables	3,94,000	REQ	10,76,500	REQ	REQ	REQ
c. Cash & Bank Balances	97,66,200	39,84,080	34,26,200	66,44,130	94,22,040	1,38,56,044
d. Other Current Assets		1,04,32,700	1,45,45,280	1,82,26,480	2,53,20,610	3,51,56,650
Total Current Assets	REQ	REQ	REQ	REQ	REQ	REQ
Total Assets	REQ	REQ	REQ	REQ	REQ	REQ
II. EQUITIES & LIABILITIES						
A. Equity						
a. Share Capital	80,00,000	80,00,000	80,00,000	80,00,000	80,00,000	80,00,000
b. Reserves & Surplus	33,20,200	REQ	REQ	2,29,06,010	REQ	REQ
Total Equities	REQ	REQ	REQ	REQ	REQ	REQ
B. Non Current Liabilities						
a. Long Term Loan	80,00,000	REQ	REQ	52,00,000	REQ	-
Total Non Current Liabilities	80,00,000	84,00,000	68,00,000	52,00,000	16,00,000	-
C. Current Liabilities						
a. Trade Payables	5,00,000	REQ	7,90,000	REQ	REQ	REQ
b. Other Current Liabilities	-	6,66,500	7,95,000	10,50,000	15,00,000	19,14,000
Total Current Liabilities	5,00,000	11,16,500	15,85,000	23,32,500	31,17,300	30,68,200

Total Equities & Liabilities	REQ	REQ	REQ	REQ	REQ	REQ
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Income Statement:

Particulars	FY 25	FY 26	FY 27	FY 28	FY 29	FY 30
Revenue from Operations	1,97,00,000	REQ	2,99,62,000	REQ	4,58,80,000	REQ
Other Income	REQ	4,20,000	REQ	6,12,000	REQ	2,46,000
Total	REQ	REQ	REQ	REQ	REQ	REQ
Less: COGS	1,18,00,000	REQ	REQ	2,18,21,000	REQ	REQ
Gross Profit	REQ	REQ	REQ	REQ	REQ	REQ
Less: SG&A	5,37,000	6,58,760	8,19,060	REQ	12,53,900	15,68,740
EBIDTA	REQ	REQ	REQ	REQ	REQ	REQ
Less:	7,90,000	7,11,000	7,19,900	6,48,000	5,83,200	5,24,800
Depreciation						
Less: Interest	6,40,000	6,72,000	5,44,000	4,16,000	1,28,000	-
EBT	REQ	REQ	REQ	REQ	REQ	REQ
Less : Tax	13,87,800	18,06,900	23,39,500	30,20,900	40,44,700	47,42,200
Profit after Tax	REQ	REQ	REQ	REQ	REQ	REQ
Less : Dividend Paid	REQ	17,60,000	19,36,000	REQ	23,42,560	25,76,816
Net Income	REQ	REQ	REQ	REQ	REQ	REQ

Income & Expenses Related Inputs

- Office Chairs sale will be 2,200 unit at Rs 6,500 in year 1. The unit will increase at 15% and sale price will increase at 8% thereafter
- Office Table sale will be 1,500 unit at Rs 3,600 in year 1. The unit will increase at 14% and sale price will increase at 8% thereafter
- Office Chairs purchase will be 2,500 unit at Rs 4,000 in year 1. The unit will increase at 11% year on year. The sale price will increase at 8% year on year
- School Bag purchase will be 1,800 unit at Rs 2,000 in year 1. The unit will increase at 8% and sale price will increase at 8% thereafter
- Out of total Sales of furnitures, 98% will be in cash and 2% will be on Credit.
- Out of total purchases of Furnitures, 90% will be in cash and 10% will be on Credit.
- Closing unit to be valued at current years purchase price
- Round off Unit for Sale and Purchase of items to 2 decimal (i.e. put -2 in roundoff formula) and Price for Sale and Purchase of items to 1 decimal (i.e. put -1 in roundoff formula)
- Sales Commission on Office Chair is 2% of Sale from Office Chair and on Office Table it is 1% on sales from Office Table
- Other Operating Expenses are 1% of total revenue from Sale of furnitures
- Tax Rate is 22% for all year. Round off to 2 decimal (i.e. put -2 in roundoff formula)

Properties, Plants & Equipments, Investments in X Ltd, Borrowings

- Machinery worth Rs 65 lac was purchased in year 1 - Depreciated at 10% pa as per WDV Method
- Office Equipment worth Rs 14 lac purchased in Year 1 and additional of Rs 8 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 15,000 shares of X Ltd in year 1 at Rs 50 per share. The Company further purchased 3,000 shares in FY 28 at Rs 120 per share.
- The Company further sold 12,000 shares at Rs 160 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 25 in year 1 and will increase by 10% thereafter.
- 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 80 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 20 lac in FY 26 which was fully repaid on 1st day of in FY 29

Share Capital & Reserves & Surplus

- Company issued 8 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%.
- 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	-	2,00,000	2,00,000	2,30,000	2,80,000	3,50,000
Trade Payables	8,60,000	16,26,800	15,50,300	17,50,300	23,58,000	36,67,700

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	97,66,200	39,84,080	34,26,200	66,44,130	94,22,040	1,38,56,044
Other Current Assets	-	1,04,32,700	1,45,45,280	1,82,26,480	2,53,20,610	3,51,56,650
Other Current Liabilities	-	6,66,500	7,95,000	10,50,000	15,00,000	19,14,000

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

B.

Choose the correct options for the following questions :

1. If the risk-free rate of return equals 6.5%. The firm's beta equals 1.25 and the return on the market portfolio equals to 15.5%. What is Cost of Equity? (2)
 - A. 17.50%
 - B. 16.88%
 - C. 17.75%
 - D. 17.95%
2. Given: risk-free rate of return = 10%; market return = 22%; cost of equity = 15.40%; value of beta (β) is: (2)
 - A. 0.65
 - B. 0.50
 - C. 0.55
 - D. 0.45
3. A company has a financial structure where equity is 75% of its total debt plus equity. Its cost of equity is 13.5% and gross loan interest is 12%. Corporation tax is paid at 20%. What is the company's weighted average cost of capital (WACC)? (2)
 - A. 12.50%
 - B. 13.5%
 - C. 13.15%
 - D. 12.5250%
4. 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%
5. Assume cash outflow equals Rs 18,60,000 followed by cash inflows of Rs 3,80,000 per year for 10 years and a cost of capital of 12.5%. What is the Net present value? (2)
 - A. Rs (2,43,844)
 - B. Rs 3,91,653
 - C. Rs 2,28,653
 - D. Rs 2,43,844
6. 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 Government
 - B. Bargaining power of Customers
 - C. Competitors rivalry
 - D. Bargaining power of Suppliers

7. A Company has 8,000 debenture issued at 12% rate having face value of Rs 100 issued at Rs 97.
If tax rate is 20%. What is Cost of Debt (Kd)? (1)
- A. 9.90%
B. 12.00%
C. 11.25%
D. 10.92%
8. Which of the following cost of capital does not requires to adjust taxes? (1)
- A. Cost of Borrowings from Banks
B. Cost of Preference Shares
C. Cost of Debentures
D. Cost of Related Party Loan
9. Borrowing availed from Banks 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. 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

b) For Remco Ltd , compute the required ratio, FCFE and Cost of Capital as specified in following sub questions :

Following is the income statement of Remco Ltd:

Particulars	FY 25	FY 26	FY 27	FY 28	FY 29
Revenue from Operations	2,09,66,400	2,57,11,200	3,15,36,000	3,88,80,000	4,86,14,400
Other Income	11,52,000	9,36,000	6,04,800	12,09,600	12,96,000
Total	2,21,18,400	2,66,47,200	3,21,40,800	4,00,89,600	4,99,10,400
Less: COGS	1,78,21,440	2,18,54,520	2,68,05,600	3,30,48,000	4,13,22,240
EBIDTA	42,96,960	47,92,680	53,35,200	70,41,600	85,88,160
Less: Depreciation	7,00,000	6,60,000	6,20,000	5,40,000	5,00,000
Less: Interest	5,00,000	5,00,000	5,00,000	5,00,000	5,00,000
EBT	30,96,960	36,32,680	42,15,200	60,01,600	75,88,160
Less : Tax (20%)	6,19,392	7,26,536	8,43,040	12,00,320	15,17,632
Profit after Tax	24,77,568	29,06,144	33,72,160	48,01,280	60,70,528
Less : Dividend Paid	3,50,000	3,85,000	4,23,500	4,65,850	5,12,435
Net Income	21,27,568	25,21,144	29,48,660	43,35,430	55,58,093

Extract of Balance Sheet

Particulars	FY 25	FY 26	FY 27	FY 28	FY 29
Equity Share Capital	3,50,000	3,50,000	3,50,000	3,50,000	3,50,000
Reserves & Surplus	21,27,568	46,48,712	75,97,372	1,19,32,802	1,74,90,895
Borrowings	50,00,000	50,00,000	50,00,000	50,00,000	50,00,000
Cash Bank	2,75,47,000	3,50,97,000	3,89,72,800	4,78,42,800	5,77,18,300

Other Information

Particulars	FY 25	FY 26	FY 27	FY 28	FY 29
No. of Shares	35,000	35,000	35,000	35,000	35,000
MPS	165	190	203	227	268

(i) Calculate the following:

- a) P/E Ratio (2)
- b) Price to Sales Ratio (2)
- c) EV/EBIDTA (2)
- d) Dividend Yield (2)
- e) Price to Book Value (2)

c) Compute the value of stock for the following years using given inputs: (5 Marks)

Particulars	Company A	Company B	Company C	Company D	Company E
Dividend Current	50	65	1.5	80	5
Risk Free Rate	7.50%	7.50%	7.50%	7.50%	7.50%
Risk Premium	12.50%	6%	7.50%	9%	14%
Beta	0.8	0.55	0.65	0.8	0.6
Dividend Growth	3%	5%	12%	10%	15%