FINAL EXAMINATION

June 2025

P–20A(SPMBV)
Syllabus 2022

STRATEGIC PERFORMANCE MANAGEMENT AND BUSINESS VALUATION

Time Allowed: 3 hours | Full Marks: 100

The figures in the margin on the right side indicate full marks.

All sections are compulsory. Each section contains instructions regarding the number of questions to be answered within the section.

All workings must form part of the answer.

Wherever considered necessary, suitable assumptions may be made and clearly indicated in the respective answer.

Section – A

Answer to* Question No. 1 *which is compulsory.

1. (a) **Choose the correct answer from the given alternatives.** **2×10=20**

(i) EVA is ___________ related to shareholder's value.

(A) directly

(B) inversely

(C) not related

(D) None of the above

(ii) The merger of one or more companies with another company or the merger of two or more companies to form one company is called ___________.

(A) Demerger

(B) Acquisition

(C) Amalgamation

(D) Slump sale

(iii) Which of the following is not a method of risk management strategy?

(A) Avoidance

(B) Retention

(C) Asset

(D) Transfer

(iv) A colour coded version of the risk map is known as

(A) Red–Blue risk map

(B) Red–Yellow map

(C) Heat map

(D) None of the above

(v) If a company has a P/E ratio of 20 and a ROE (Return on Equity) of 15% then the Market to Book Value Ratio is

(A) 3 times

(B) 0.03

(C) Cannot be calculated from the given information

(D) None of the above

(vi) The COSO Framework of ERM (Enterprise Risk Management) advocates eight interrelated components of an ERM. Which one of the following is not a component of the said framework?

(A) Risk Response

(B) Risk Avoidance

(C) Risk Assessment

(D) Monitoring

(vii) Market price per share of a firm having Return on Equity (ROE) of 10.50%, EPS of ₹ 8.50 and P/B (Price to Book Value) Ratio of 0.75 is (Answer is up to 2 places of decimals.)

(A) ₹ 60.71

(B) ₹ 66.71

(C) ₹ 71.60

(D) None of the above

(viii) A _______ is an option issued by a company to buy a stated number of shares of stock at a specified price.

(A) Warrant

(B) Bond

(C) Puttable Bond

(D) None of the above

(ix) Which of the following is a financial liability for a company?

(A) X Ltd. has issued 10 crore equity shares of ₹ 10 each.

(B) X Ltd. has issued 10 crore cumulative redeemable preference shares of ₹ 10 each.

(C) X Ltd. has issued 10 crore non-cumulative compulsorily convertible preference shares of ₹ 10 each.

(D) Both (B) and (C)

(x) Which category of risks are measured by Beta?

(A) Management

(B) Inflation

(C) Financing

(D) Market

(b) Read the following scenario and answer the following questions: $2 \times 5 = 10$

Krishna Inks, a leading manufacturer of fountain pen inks, is striving to enhance product quality, process efficiency and financial performance. The company integrates Statistical Quality Control (SQC), Total Productive Maintenance (TPM) and financial performance measurement to improve operational effectiveness.

Phase 1: Quality Control & Defect Rate Monitoring (SQC Implementation)

The Quality Assurance (QA) team at Krishna Inks employs p-charts to monitor defect rates. A sample of 10 production batches, each containing 200 ink bottles, was tested for nonconforming units. The recorded defects per batch were:

Batch No.	1	2	3	4	5	6	7	8	9	10
Defects	12	7	9	15	10	5	6	13	8	9

The quality control manager is responsible for calculating the fraction defective (p) and determining control limits (UCL & LCL) to check if the production process is statistically stable.

Phase 2: Total Productive Maintenance (TPM) & OEE Calculation

Krishna Inks has three production machines (M1, M2, M3), each producing ink bottles.

The data for the machines is:

Machine	Availability (%)	Performance (%)	Quality (%)
M1	88	90	98
M2	92	85	97
M3	95	88	95

Phase 3: Financial Performance Analysis & Decision Making

The company is also evaluating its financial performance using Data Envelopment Analysis (DEA) to assess the efficiency of four plants (P1, P2, P3, P4) in terms of output per unit of input cost.

Plant	Production Output (units)	Total Cost (₹ million)
P1	110,000	18
P2	130,000	20
P3	100,000	15
P4	125,000	19

Choose the correct answer from the four alternatives given based from the above scenario:

(xi) What is the calculated fraction nonconforming (p) in the production process?
- (A) 0.043
- (B) 0.047
- (C) 0.050
- (D) 0.055

(xii) What is the OEE for Machine M1?
- (A) 78.2%
- (B) 81.5%
- (C) 85.1%
- (D) 77.6%

(xiii) What does a process being "out of control" in SQC indicate?
- (A) Defects are present in every sample.
- (B) The process is stable but shows minor deviations.
- (C) A single data point lies outside the control limits.
- (D) All defect rates are within normal variation.

(xiv) Which plant is the most efficient based on DEA?
- (A) P1
- (B) P2
- (C) P3
- (D) P4

(xv) If Krishna Inks wants to improve its financial efficiency while maintaining quality, which strategy is optimal?
- (A) Reduce input costs in the least efficient plant
- (B) Increase production without adjusting costs
- (C) Lower quality control inspections to save time
- (D) Expand investment in the highest cost plant

Section – B

Answer any five questions from* Question No.2 *to* Question No.8 *in Section B.
Each question carries 14 marks. 14×5=70

2. (a) Decision Grid Analysis is a powerful tool used to develop strategies where customer profitability database is large. **What** are the components of the Decision Grid Analysis (DGA)? **Illustrate** the four segments of a decision grid along with explanation. 7

(b) **Explain** with examples the main features of performance, productively and efficiency. 7

3. (a) ABC Ltd., a manufacturing firm, operates in a competitive market and aims to maximize its profit. The company's Total Revenue (TR) and Total Cost (TC) functions are given as follows:

$TR = 4000Q - 33Q^2$

$TC = 2Q^3 - 3Q^2 + 400Q + 5000$

Where Q represents the quantity of goods produced and sold. The management seeks to determine the maximum possible profit the firm can achieve, assuming $Q > 0$.

Required:

At what level of output does ABC Ltd. achieve maximum profit, and what is the maximum profit value? 7

(b) **What** is Risk Enabled Performance Management? 7

4. (a) The followings are the financial data of JKL Ltd.:

	2024-25		2023-24	
Particulars	**₹ '000**	**₹ '000**	**₹ '000**	**₹ '000**
Non-current Assets				
Plant & Machinery		260		278
Current Assets				
Inventory	84		74	
Trade receivables	58		46	
Bank	6	148	50	170
Total		**408**		**448**
Capital and Reserves				
Ordinary Share Capital @ ₹ 50 each		70		70
8% Preference Shares		50		50
Securities Premium		34		34
Revaluation Reserve		20		—
Profit and Loss Account		62		84
		236		**238**
Non-current Liabilities				
5% Secured Loan Stock		**80**		**80**
Current Liabilities				
Trade Payables	72		110	
Provision for Taxation	20	**92**	20	**130**
		408		**448**

Summarized Income Statement for the year ended 31st March, 2025 and 31st March, 2024:

	2024-25		2023-24	
	₹ '000	₹ '000	₹ '000	₹ '000
Sales		418		392
Opening Inventory	74		58	
Purchases	324		318	
	398		**376**	
Closing Inventory	(84)	**(314)**	(74)	**(302)**
Gross Profit		**104**		**90**
Interest	4		4	
Depreciation	18		18	
Sundry Expenses	28	**(50)**	22	**(44)**
Profit before Tax		54		46
Provision for Taxation		(20)		(20)
Profit after Tax		**34**		**26**
Equity Dividend	12		10	
Preference Dividend	4	(16)	4	(14)
Retained Profit		**18**		**12**
The market price per share		**₹ 240**		**₹ 170**

Calculate the following ratios and comment on the financial position of JKL Ltd.:

(i) Return on Capital Employed (ROCE)
(ii) Asset Turnover Ratio (ATR)
(iii) Current Ratio (CR)
(iv) Inventory Turnover Ratio (ITR)
(v) Capital Gearing Ratio (CGR)
(vi) Dividend Coverage Ratio (DCR)
(vii) Price/Earnings Ratio (P/E Ratio) 7

(b) Mr. Sharma, a Cost Accountant by profession, is an independent financial analyst. He extracted the respective ratios (Note 1) and calculated the overall Altman Z-score for Y-Connection, an Indian firm engaged in the manufacture of electronics products during the period 2020 to 2024, which is given as under:

Years	2020	2021	2022	2023	2024
X1	0.020	0.010	– 0.010	0.020	0.040
X2	0.174	0.110	0.110	0.110	0.070
X3	0.253	0.080	0.180	0.200	0.130
X4	0.565	0.469	0.663	0.922	0.724
X5	0.823	0.900	1.060	1.200	1.540
Score	1.840	1.580	2.000	2.450	2.490

Note 1:

X_1 = *Working Capital to Total Assets*

X_2 = *Retained Earnings to Total Assets*

X_3 = *EBIT to Total Assets*

X_4 = *Market Value of Equity to Total Debts*

X_5 = *Sales to Total Assets*

You, as a new recruit, have been asked by Mr. Sharma to **interpret** the above results and **comment** on the financial position of the firm. **What** would be your response? 7

5. (a) The Balance Sheet of ABC Ltd. as on 31.12.2024 is as follows:

Equity and Liability	₹	**Assets**	₹
(1) Shareholders Fund:		**(1) Non-Current Assets:**	
(I) Share Capital (₹ 100 each)		(I) Fixed Assets	
(i) 4,500 Equity Shares	4,50,000	(i) Tangible Assets:	
(ii) 1,500 6% Preference Shares	1,50,000	Freehold Properties	3,75,000
		Plant and Machinery	1,50,000
(II) Reserve & Surplus	7,50,000		
(2) Non-Current Liabilities:		(ii) Intangible Assets:	
Long-term Borrowings— 5% Debenture	3,00,000	Goodwill	1,50,000
(3) Current Liabilities:		(II) Non-Current Investments	
Trade Payables – Sundry Creditors	2,39,250	Quoted (Return 10% on cost)	3,00,000
		(2) Current Assets:	
		(I) Inventories	2,70,000
		(II) Trade Receivables	
		Sundry Debtors	2,99,250
		(III) Cash and Cash Equivalents	3,45,000
Total ₹	**18,89,250**	**Total** ₹	**18,89,250**

Profits for the three years 2022,2023,2024 after charging the debenture interest but before providing for preference dividend, were ₹ 2,20,500, ₹ 3,22,500 and ₹ 2,40,000 respectively.

1. Preference shares are payable on Liquidation.
2. The purchaser wants to acquire all the 4,500 Equity Shares.
3. The price for Equity Shares is to be based on the following assumptions:
   (i) Normal return of 12% on Net Asset (at revised valuation) attributable to Equity Shares.
   (ii) Goodwill to be calculated at 4 times the adjusted average super profits of the 3 years referred above.
   (iii) Debentures will be redeemed at a discount of 25% prior to the sale of the business; and in order to provide fund for this purpose, investments will be sold out.
   (iv) Value of Freehold Property is agreed to be ascertained on the basis 8% return. The current rental value is ₹ 50,400.
   (v) A claim of ₹ 8,250 was omitted to be provided in the year 2024.
   (vi) Market Value of Quoted Investments was ₹ 3,75,000.
   (vii) Non-recurring profits are to be eliminated. 10% of the profits for 2023 referred to above arose from a transaction of non-recurring nature.
   (viii) A Provision of 5% on Sundry Debtors made in 2024 is no longer required (the provision when made was taken into account for purpose of Income Tax at 50%).

Required:

Prepare a statement showing valuation for the Company's Shares (from the point of view of the purchaser) after taking into account the revised valuation of goodwill based on 4 years purchase of super profits based on the average profits of the three years. 7

(b) XENON Ltd. reported a profit of ₹ 100.32 lakhs after 34% tax for the financial year 2024-25. An analysis of the accounts reveals that the income included extraordinary items of ₹ 14 lakhs and an extraordinary loss of ₹ 5 lakhs. The existing operations, except for the extraordinary items, are expected to continue in future. Further, a new product is launched and the expectations are as under:

Particulars	**Amount ₹ in lakhs**
Sales	70
Material Costs	20
Labour Costs	16
Fixed Costs	10

The company has 50,00,000 Equity Shares of ₹ 10 each and 80,000 9% Preference Shares of ₹ 100 each with P/E Ratio being 6 times. Cost of capital is 12% (post tax).

You are required to

(i) compute the value of the business.

(ii) determine the market price per equity share. 7

6. (a) Panda Limited holds 4,00,000 shares of AMGI Limited at cost of ₹ 48,00,000.

The following is the latest available Balance Sheet of AMGI Limited:

Particulars	₹
Equity Share Capital	1,00,00,000
Other Equity	2,40,47,110
Non-Current Liabilities	22,30,898
Total Liabilities and Equity	**3,62,78,008**
Non-Current Assets	2,40,13,129
Net Working Capital	1,22,64,879
Total Assets	**3,62,78,008**

Additional Information includes:

(I) The Face Value per share is ₹ 10/-.

(II) Non-Current Asset of AMGI Ltd includes Land at Cost of ₹ 1,00,00,000. The Fair Value of such Land is estimated at ₹ 1,75,00,000.

(III) AMGI Ltd. has a contingent liability of ₹ 12,00,000 which is not reflected in the Balance Sheet. As a Valuer, you believe that this contingent liability is likely to be incurred.

You are required to

(i) estimate the fair value per share of AMGI Ltd.

(ii) estimate the fair value of investments in AMGI Ltd. in the books of Panda Limited.

(iii) estimate the Compounded Annual Growth Rate (CAGR) Change in value of investment if the investment was made 4 Years ago. 7

(b) The following information has been extracted from the Annual Report 2024-25 of ABC Limited:

BALANCE SHEET AS AT 31ST MARCH, 2025

(₹ in lakhs)

Particulars	ABC LTD
ASSETS	
NON-CURRENT ASSETS	
Property, Plant and Equipment	3,535.67
Capital work-in-progress	898.83
Intangible assets	550.00
Financial Assets	
Non-current investments	1,664.30
Long-term loans and advances	891.97
Other non-current financial assets	3.03
Total Non-Current Assets	**7,543.80**
CURRENT ASSETS	
Inventories	1,389.92
Financial Assets	
Current investments	142.50
Trade receivables	585.77
Cash and bank balances	38.41
Short-term loans and advances	115.00
Total Current Assets	**2,271.60**
TOTAL	**9,815.40**
EQUITY AND LIABILITIES:	
EQUITY	
Share Capital (Face Value — ₹ 10 each)	36.35
Other Equity	2,225.66
Total Equity	**2,262.01**
NON-CURRENT LIABILITIES	
12% Redeemable Non-Convertible Preference Shares	2,717.18
8% Long-term Borrowings from Bank	3,007.09
Total Non-Current Liabilities	**5,724.27**
CURRENT LIABILITIES	
Trade payables	1,797.88
Other current liabilities	12.24
Short-term provisions	19.00
Total Current Liabilities	**1,829.12**
TOTAL	**9,815.40**

STATEMENT OF PROFIT AND LOSS FOR THE YEAR ENDING ON 31ST MARCH, 2025	*(₹ in lakhs)*
Particulars	**ABC LTD**
Revenue from operations	1,995.00
Other Operating Income	0.75
Interest and Dividend Income on Non-Current Financial Investments	250.00
Other Non-Operating Income	1.25
Total Revenue	**2,247.00**
EXPENSES	
Raw materials consumed	732.79
Power & Fuel Cost	41.37
Changes in inventories of finished goods, work-in-progress, and stock-in-trade	(1.63)
Employee benefits expense	15.97
Depreciation and amortization expense	80.77
Other operating expenses	54.23
Total Expenses	**923.50**
Profit before Interest, Exceptional Items and Tax	**1,323.50**
Less: Interest	240.57
Profit before Exceptional Items and Tax	**1,082.93**
Less: Exceptional Items	35.00
PROFIT/(LOSS) BEFORE TAX	**1,047.93**
Less: Tax Paid @ 30%	314.38
PROFIT/(LOSS) AFTER TAX	**733.55**

Required:

From the above information, **determine** the Economic Value Added (EVA) of ABC Limited for the FY 2024-25 if its Weighted Average Cost of Capital is 12.50%. 7

7. (a) Two firms RAJJAN and REKHA Corporation operate independently and have the following financial statements:

Particulars	Rajjan	Rekha
Revenues (₹)	8,00,000	4,00,000
Cost of Goods Sold (COGS) (₹)	6,00,000	2,40,000
EBIT (₹)	2,00,000	1,60,000
Expected Growth Rate	6%	8%
Cost of Capital	10%	12%

Both firms are in steady state, with capital spending offset by depreciation. No working capital is required, and both firms face a tax rate of 40%. Combining the two firms will create economies of scale in the form of shared distribution and advertising cost, which will reduce the cost of goods sold from 70% of revenues to 65% of revenues. Assume that the firm has no debt capital.

Estimate:

(i) The value of the two firms before the merger

(ii) The value of the combined firm with synergy effect 7

(b) Preetam Ltd. is considering acquisition of Soham & Co. which has 3.10 crore shares issued and outstanding. The market price per share of Soham & Co is ₹ 440 at present. Preetam Ltd.'s average cost of capital is 12%. The cash inflows of Soham & Co. for the next three years are as under:

Year	₹ Crore
1	460
2	600
3	740

You are required to calculate the range of valuation that Preetam Ltd. has to consider. P.V.F. @12% for 3 years are 0.893, 0.797 and 0.712 respectively. 7

8. (a) Last year, Mr. Sandeep was engaged as a consultant to the Expert Electricals and prepared some analysis of its cost-volume-profit relationships. Among his findings was that the profit volume ratio was 40% at the firm's planned selling price of ₹ 50. The firm expected to sell 8,000 units at the price of ₹ 50, which would result in an income of ₹ 96,000. Sandeep stressed the point in his report to the chief executive of the Company that profits would change at the rate of ₹ 0.40 per rupee change in sales.

The chief executive called Sandeep to tell him that the result did not come out as were told to him. The firm earned profits of ₹ 1,26,400 on sales volume of ₹ 4,53,600. Although variable costs per unit were incurred as expected, the firm had higher fixed costs than expected because of ₹ 4,000 advertising campaign during the year. The campaign was coupled with an increase in selling price and the chief executive was very pleased with the results. However, Sandeep is asked to explain why profits did not increase by 40% of the added sales volume of ₹ 53,600 but rather somewhat more.

You are required to do the following:

(i) Reconstruct the income statement for the year based on the actual results.

(ii) Determine (I) the number of units sold and (II) the selling price per unit.

Explain to the chief executive why the results were at variance with the planned results. 7

(b) The following information is relating to Fortune India Ltd. having two division Pharma division and FMCG division. Paid up share capital of Fortune India Ltd. is consisting of 3,000 lakhs equity shares of ₹ 1 each. Fortune India Ltd. decided to de-merge Pharma Division as Fortune Pharma Ltd. w.e.f. 1.4.2024. Details of Fortune India Ltd. as on 31.3.2024 and of Fortune Pharma Ltd. as on 1.4.2024 are given below:

Particulars	**Fortune Pharma Ltd. (₹) in lakh**	**Fortune India Ltd. (₹) in lakh**
Other Liabilities		
Secured Loans	400	3,000
Unsecured Loan	2,400	800
Current Liabilities	1,300	21,200
Total Liabilities	**4,100**	**25,000**
Assets		
Fixed Assets	7,740	20,400
Investments	7,600	12,300
Current Assets	8,000	30,200
Loan & Advances	1,700	7,300
Deferred Tax / Misc. Exp.	60	(200)
Total Assets	**25,100**	**70,000**

Board of directors of the company have decided to issue necessary equity shares of Fortune Pharma Ltd. of ₹ 1 each, without any consideration to the shareholders of Fortune India Ltd. For that purpose, following points are to be considered:

- Transfer of Liabilities and Assets at Book value
- Estimated profit for the year 2024-25 is ₹ 11,400 lakh for Fortune India Ltd. and ₹ 1,470 lakh for Fortune Pharma Ltd.
- Estimated Market price of Fortune Pharma Ltd. is ₹ 24.50 per share.
- Average P/E ratio of FMCG sector is 42 and Pharma sector is 25, which is to be expected for both the companies.

Calculate:

(i) The Ratio in which shares of Fortune Pharma are to be issued to the shareholders of Fortune India Ltd.

(ii) Expected Market price of Fortune India Ltd.

(iii) Book value per share of both the companies after demerger. 7