



**FINAL EXAMINATION**  
**MODEL QUESTION PAPER**  
**PAPER – 20A**

**SET - 2**  
**TERM – DECEMBER 2025**  
**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.

**SECTION – A (Compulsory)**

**1. (a) Choose the correct option:**

**[15 x 2 = 30]**

- (i) \_\_\_\_\_ involves breaking down each of the activities of a firm into its various activities, and showing where value is added for its customers.
- (a) Storyboarding.
  - (b) Value Chain analysis.
  - (c) Blueprinting.
  - (d) Perceived service.
- (ii) How many different perspectives are there with a balanced scorecard?
- (a) 3
  - (b) 2
  - (c) 6
  - (d) 4
- (iii) One of the following is not a Competition based pricing method.
- (a) Going rate pricing
  - (b) Sealed bid pricing
  - (c) Marginal cost pricing
  - (d) Trade association based pricing
- (iv) The standard error (SE) of the sample mean loss distribution is equal to the
- (a) Cash profit position standard deviation of the population multiplied by the square root of the sample size
  - (b) standard deviation of the population multiplied by the cube root of the sample size.
  - (c) standard deviation of the population divided by the square root of the sample size.
  - (d) standard deviation of the population divided by the cube root of the sample size.
- (v) When valuation process is under multiple scenarios, you take into consideration,
- (a) Scenarios
  - (b) Ranges of value
  - (c) Ranges of value or Scenarios
  - (d) Ranges of value & Scenarios



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- (vi) What does the Liquidation Value refer to in the asset-based approach to valuation?
- (a) The current cost of replacing all the assets of a company
  - (b) The value of the asset on a free market
  - (c) Sum of estimated sale values of the assets owned by a company
  - (d) The present value of the future earnings from the asset.
- (vii) In the absence of any information, valuers must consider valuing such unquoted investments at their
- (a) Net Asset Values under cost approach
  - (b) P/BV under market approach
  - (c) PECV under Income approach
  - (d) the Discounted Cash Flow (DCF) approach
- (viii) Market value Added (MVA) is the difference between the \_\_\_\_\_ of a firm and the \_\_\_\_\_ contributed by investors
- (a) Current market value, Capital
  - (b) Book value, Capital
  - (c) Book Value, Debt
  - (d) None of the above
- (ix) The sales turnover of a company is ₹ 150 million. The peer group sales turnover is ₹ 600 million, and peer group market capitalisation is ₹ 1,800 million. The peer group sales multiple is?
- (a) 2 Times
  - (b) 3 Times
  - (c) 4 Times
  - (d) 6 Times
- (x) What type of merger took place between Vodafone India and Idea Cellular?
- (a) Horizontal merger
  - (b) Vertical merger
  - (c) Conglomerate merger
  - (d) Vortex merger.

**(b) Read the following scenario and answer the following questions:**

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



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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:

(i) What is the calculated fraction nonconforming ( $p$ ) in the production process?

- (a) 0.043
- (b) 0.047
- (c) 0.050
- (d) 0.055

(ii) What is the OEE for Machine M1?

- (a) 78.2%
- (b) 81.5%
- (c) 85.1%
- (d) 77.6%

(iii) What does a process being "out of control" in SQC indicate?



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- (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.
- (iv) Which plant is the most efficient based on DEA?  
(a) P1  
(b) P2  
(c) P3  
(d) P4
- (v) 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 out of seven questions given. Each question carries 14 Marks.)**

**[5x14=70]**

2. (a) Explain the four intrinsic flows of the supply chain and Components of Supply Chain Management. [7]  
(b) Distinguish between Six Sigma and Total Quality Management. [7]
3. (a) A radio manufacturer produces “x” sets per week at total cost of  $x^2 + 78x + 2500$ . He is a monopolist and the demand function for his product is  $x = (600-P)/8$ , when the price is “p” per set. Demonstrate that maximum net revenue is obtained when 29 sets are produced per week and calculate the monopoly price. [7]  
(b) Explain briefly the process and objectives of risk management. [7]
4. (a) Describe RONA (Return on Net Assets) and its implications in details. [7]  
(b) Mr. Hajime is considering investing in bonds of two companies; Lotus Inc. and Woodex Inc. He has a recently received a sum of ₹ 35,50,000 from sale of a market related insurance product which he invested in 10 years back. He is nearing retirement age and desire to undertake minimal risk in his investment. He is also worried about the default risk associated with his investment and desire to assess the chance of the company (in which he invests) going bust. For the purpose of the financial assessment he recalls his



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childhood friend Simmamoto who is currently into financial consultancy. He requests her to assess the bankruptcy risk associated with the two companies; Lotus Inc. and Woodex Inc. For the purpose she looks into the financial statements of the two companies which are extracted from the annual reports and are given below;

Relevant particulars from the annual reports of Lotus Inc. and Woodex Inc.

Particular	Lotus Inc.	Woodex Inc.
	Amount (₹)	Amount (₹)
Working Capital	10,00,000	20,00,000
Retained Earnings	5,00,000	9,50,000
Earnings Before Interest and Taxes	7,50,000	7,50,000
Market Value of Equity	15,00,000	18,00,000
Sales	12,00,000	15,00,000
Total Assets	10,00,000	12,00,000
Total Liabilities	10,00,000	12,00,000

Calculate which company is safer to invest by using Altman Z score and why.

[7]

5. (a) Umang Ltd. has announced issue of warrants on 1:1 basis for its equity shareholders. The current price of the stock ₹ 10 and warrants are convertible at an exercise price of ₹ 11.71 per share. Warrants are detachable and are trading at ₹3. Compute the minimum price of the warrant and the warrant premium.

Now had the current price been ₹16.375, calculate the minimum price and warrant premium? (Consider warrants are tradable at ₹ 9.75).

[7]

(b) Quinton Johnston is evaluating TMI Manufacturing Company, Ltd., which is headquartered in Taiwan. In 2019, when Johnston is performing his analysis, the company is unprofitable. Furthermore, TMI pays no dividends on its common shares. Johnston decides to value TMI Manufacturing by using his forecasts of FCFE. Johnston gathers the following facts and assumptions.

- (i) The company has 17 billion shares outstanding.
- (ii) Sales will be 5.5 billion in 2020, increasing at 28% annually for the next four years (through 2024).
- (iii) Net income will be 32% of sales.
- (iv) Investment in fixed assets will be 35% of sales; investment in working capital will be 6% of sales;
- (v) Depreciation will be 9% of sales.
- (vi) 20% of the investment in assets will be financed with debt.
- (vii) Interest expenses will be only 2% of sales.
- (viii) The tax rate will be 10%. TMI Manufacturing's beta is 2.1; the risk-free government bond rate is 6.4%;
- (ix) The equity risk premium is 5%.
- (x) At the end of 2024, Johnston projects TMI will sell for 18 times earnings.

Calculate the value of one ordinary share of TMI Manufacturing Company.

[7]

6. (a) V. Goel, the current Copyright holder of the book "Business Valuation, Practitioners' Guide valuation of Companies" is willing to sell the copyrights of his book to a publisher who is keen to buy the copyrights. The following assumptions may be relevant.



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Currently, 2500 copies of the book are sold at an annual price of ₹1,750 per book. The cost of production, distribution and author royalties amount to 70% of Sales. The book is becoming popular and the publisher estimates that the sales of the book may increase by 5 % every year for the next 5 years and for 2 % from year 6 to 10. This is including the newer editions of the same book. However, after 5 years, given the introduction of other books on the same subject, dilution of exclusivity, violation of copyrights and plagiarism, there may not be any special advantage from the book beyond year 10. Assuming a discount rate of 10 %, Assess the value of the copyrights. [7]

(b) You are given following information about Sandeep Ltd.:

(i) Beta for the year 2024-25: 1.05

(ii) Risk free rate 12%

(iii) Long Range Market Rate (based on BSE Sensex): 15.14%

(iv) Extracts from the liabilities side of balance sheet as at 31st March, 2025:

PARTICULARS	₹
Equity	29,160
Reserve & Surplus	43,740
Shareholder's Fund	72,900
Loan Funds	8,100
Total Funds (Long term)	81,000

(v) Profit after tax ₹ 20,394 .16 lakhs

(vi) Interest deducted from profit ₹487.00 lakhs

(vii) Effective tax rate (i.e. Provision for Tax/PBT x 100) 24.45%.

Calculate Economic Value Added of Sandeep Ltd. as on 31<sup>st</sup> March 2025 [7]

7. (a) ABC Ltd. run and managed by an efficient team that insists on reinvesting 60% of its earnings in projects that provide an ROE (return of equity) of 10%, despite the fact that the firm's capitalization rate (K) is 15%. The firm's current year's earning is ₹ 10 per share.

Calculate at what price the stock of ABC Ltd. Sell. Evaluate what is the present value of growth opportunities. Suggest why such a firm would be a takeover target. [7]

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

Particulars	Rajjan	Rekha
Revenue	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



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revenues. Assume that the firm has no debt capital. Calculate:

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

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

[7]

8. (a) The Balance Sheets of Maras Ltd. for the years ended on 31.03.2024 and 31.03.2025 are as follows:

(Amount in ₹ Lakh)

	As at 31.03.24	As at 31.03.25
Equity & Liabilities		
Shareholder's Fund:		
Share capital	696.60	726.70
Equity Share suspense	30.07	—
Equity Share warrants	—	841.20
Reserve & Surplus	31,256.89	39,156.40
Non-Current Liabilities:		
Secured Loans	4,784.56	3,300.09
Unsecured Loans	9,128.31	14,939.75
Deferred Tax liabilities	3,491.00	3,936.27
Current Liabilities:		
Other current liabilities	8,432.77	10,522.73
Provisions	856.44	1,496.31
	58,676.64	74,919.45
Assets		
Non-current assets	—	—
Fixed Assets (Net)	31,830.23	30,941.81
Capital work in progress	3,764.07	11,502.92
Non-Current Investment:		
Investment	8,125.67	11,031.80
Current Assets:		
Inventories	6,068.25	7,123.77
Trade receivables	1,866.21	3,113.79
Cash and bank balance	917.68	2,140.03
Other current assets	1.53	36.27
Loans and advances	6,103.00	9,029.06
	58,676.64	74,919.45

i. Classify, how would you make the Common-Size Balance Sheet of Maras Ltd.?

ii. Interpret your observations on the common-size Balance Sheet.

[7]



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- (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
<b>Other Liabilities</b>		
Secured Loans	400	3,000
Unsecured Loan	2,400	800
Current Liabilities	1,300	21,200
<b>Total Liabilities</b>	<b>4,100</b>	<b>25,000</b>
<b>Assets</b>		
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)
<b>Total Assets</b>	<b>25,100</b>	<b>70,000</b>

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]