Skillshort

Self-Study Preparation Pack

CMA INTERMEDIATE

Paper 11: Financial Management and Business Data Analytics (FMDA)

Mock Test 2 – Full Paper with Model Answers

ICMAI Syllabus 2022 pattern: 100 marks · 3 hours · Section A – 15 MCQs × 2 (compulsory) · Section B – any 5 of Q2–Q8 (14 marks each) · Original Skillshort questions, numericals verified in Python

Time: 3 hours | Max marks: 100 | No negative marking | Model answers follow the paper

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This subject pack has 6 parts

1 Chapter-wise notes

2 Important topics & weightage

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Prepared by Skillshort for self-study. Original explanations and questions; not an official ICAI/ICMAI/ICSI publication. Items marked VERIFY should be checked against the latest official material.

Section A – Multiple Choice Questions (30 marks)

Q1. Choose the correct option (2 × 15 = 30).

1. ₹50,000 invested at 10% compound interest for 2 years grows to

(a) ₹55,000 (b) ₹60,000
(c) ₹60,500 (d) ₹61,000

2. Which of the following is a systematic risk?

(a) Strike in one company (b) Interest-rate risk
(c) Default by one borrower (d) Loss of a key customer

3. Current ratio 2.5, quick ratio 1.5 and current liabilities ₹2 lakh. Inventory is

(a) ₹1 lakh (b) ₹2 lakh
(c) ₹3 lakh (d) ₹5 lakh

4. Net margin 5%, asset turnover 2 and equity multiplier 2. ROE under the DuPont model is

(a) 10% (b) 15%
(c) 20% (d) 25%

5. The annualised cost of not taking a discount on terms 1/10 net 30 (365-day year) is about

(a) 12.2% (b) 18.4%
(c) 24.8% (d) 36.5%

6. PV of inflows ₹6 lakh; initial outlay ₹5 lakh. The profitability index is

(a) 0.83 (b) 1.00
(c) 1.20 (d) 1.50

7. DOL is 2 and DFL is 1.5. The degree of combined leverage is

(a) 0.5 (b) 1.33
(c) 3.0 (d) 3.5

8. At the EBIT–EPS indifference point, two financing plans give

(a) The same EBIT (b) The same EPS
(c) The same interest (d) The same number of shares

9. The cost of retained earnings is generally taken as equal to

(a) Zero
(b) The cost of debt
(c) The cost of equity (adjusted for flotation, if any)
(d) The bank rate

10. Under MM with taxes, an unlevered firm is worth ₹50 lakh. An identical firm has debt of ₹20 lakh; tax rate 30%. The levered firm's value is

(a) ₹50 lakh (b) ₹56 lakh
(c) ₹64 lakh (d) ₹70 lakh

11. Annual cash requirement ₹25 lakh; cost per transaction ₹200; interest rate 10%. The Baumol optimal cash balance is

(a) ₹50,000 (b) ₹70,711
(c) ₹1,00,000 (d) ₹1,41,421

12. In a common-size balance sheet each item is shown as a percentage of

(a) Sales (b) Total assets
(c) Net profit (d) Share capital

13. In the DIKW hierarchy, the top level is

(a) Data (b) Information
(c) Knowledge (d) Wisdom

14. The most suitable chart to show a trend in monthly sales over two years is a

(a) Pie chart (b) Line chart
(c) Scatter plot (d) Treemap

15. XBRL tags each item in a financial statement using a

(a) Taxonomy (b) Spreadsheet
(c) Pivot table (d) Blockchain

Section A – Answer key with reasons

Q	Ans	Explanation / working
1	(c)	50,000 × 1.1^2 = **₹60,500**.
2	(b)	**Interest-rate risk** affects all securities and cannot be diversified away.
3	(b)	CA 5 lakh − quick assets 3 lakh = **₹2 lakh**.
4	(c)	5% × 2 × 2 = **20%**.
5	(b)	(1 ÷ 99) × 365 ÷ 20 = **18.43%**.
6	(c)	6 ÷ 5 = **1.20**.
7	(c)	DCL = DOL × DFL = **3.0**.
8	(b)	The indifference point is the EBIT at which **EPS is equal** under both plans.
9	(c)	Retained earnings have an **opportunity cost** equal to Ke.
10	(b)	V_L = V_U + D × t = 50 + 20 × 0.30 = **₹56 lakh**.
11	(c)	√(2 × 25,00,000 × 200 ÷ 0.10) = √1,00,00,00,000 = **₹1,00,000**.
12	(b)	Balance-sheet items are expressed as % of **total assets** (or total liabilities).
13	(d)	Data → information → knowledge → **wisdom**.
14	(b)	**Line charts** show change over time.
15	(a)	A **taxonomy** defines the elements and their relationships.

Section B – Descriptive Questions (70 marks)

Answer any five of Questions 2 to 8 (14 marks each). Working notes form part of the answer.

Q2 (a) (7 marks). Distinguish between the primary market and the secondary market, and state the functions of a stock exchange.

(b) (7 marks). What is predictive analytics? Explain how it works, with two examples from finance.

Q3 (a) (7 marks). From the following data of Kappa Ltd. compute the current ratio, quick ratio, debt-equity ratio, interest coverage, ROCE, ROE, stock turnover and debtors' collection period (365 days). Balance sheet (₹ lakh): equity share capital 20, reserves 10, 10% debentures 15, creditors 6, bank overdraft 4; fixed assets 32, stock 8, debtors 9, cash 3, prepaid expenses 3. Sales 60 (credit 48); cost of goods sold 42; opening stock 6; EBIT 9; interest 1.5; tax 25%.

(b) (7 marks). Prepare a trend-analysis statement (2023-24 = 100) and comment (₹ lakh): sales 100, 120, 150; cost of goods sold 70, 86, 105; operating expenses 15, 17, 21 for 2023-24, 2024-25 and 2025-26.

Q4 (a) (7 marks). Compute (i) the cost of equity by CAPM: Rf 7%, β 1.3, Rm 13%; and (ii) the pre-tax and after-tax yield to maturity (approximation formula) of a 10% bond of ₹1,000 maturing in 5 years and priced at ₹950; tax 25%.

(b) (7 marks). Target capital structure: equity 50%, preference 20%, debt 30%. Retained earnings available ₹15 lakh (Ke 14%); new equity costs 15.5%. Preference shares cost 11%. Debt up to ₹9 lakh costs 8% after tax, and 9% beyond. Find the break points and the marginal cost of capital schedule.

Q5 (a) (7 marks). Machine P costs ₹6 lakh, lasts 3 years, operating cost ₹1.2 lakh a year. Machine Q costs ₹9 lakh, lasts 5 years, operating cost ₹1 lakh a year. Cost of capital 12% (PVAF 3 years 2.402; 5 years 3.605). Which machine should be bought? Use equivalent annual cost.

(b) (7 marks). A project costs ₹10 lakh and is expected to yield ₹4, 5 and 6 lakh in years 1–3. Certainty-equivalent coefficients are 0.9, 0.8 and 0.7; risk-free rate 6% (PVF 0.943, 0.890, 0.840). Compute the certainty-equivalent NPV and advise.

Q6 (a) (7 marks). Credit sales ₹50 lakh; average collection period 45 days; bad debts 2%; variable cost 70% of sales; required return 15%; 360-day year. Proposed terms 2/10 net 30: 60% of customers will take the discount, the rest pay on day 30, and bad debts fall to 1%. Evaluate the proposal.

(b) (7 marks). (i) Annual cash requirement ₹72 lakh; cost per transaction ₹200; interest on securities 8%. Find the Baumol optimum cash balance and the number of conversions. (ii) Under Miller–Orr: lower limit ₹50,000; variance of daily cash flows ₹40,00,000; transaction cost ₹150; daily interest 0.025%. Find the spread, return point and upper limit.

Q7 (a) (7 marks). EBIT ₹6 lakh; 10% debt ₹20 lakh. Find the value of the firm, the value of equity and the overall cost of capital under (i) the NI approach (Ke 15%) and (ii) the NOI approach (Ko 12%).

(b) (7 marks). Explain MM's proposition with corporate taxes. EBIT ₹10 lakh; tax 25%; cost of equity of an unlevered firm 12.5%; an identical levered firm has debt of ₹20 lakh. Find the value of both firms.

Q8 (a) (7 marks). What is a dashboard? Explain its types and the features of a good dashboard.

(b) (7 marks). What is XBRL? Explain its benefits and its use in India.

Model Answers – Section B

SOLUTION Q2(a) Primary vs secondary market

Basis	Primary market	Secondary market
Meaning	Market for **new issues**	Market for **existing** securities
Flow of funds	From investors to the company	Between investors; company not involved
Methods	IPO, FPO, rights, private placement, QIP	Trading on stock exchanges
Price	Fixed by the issuer or book building	Set by demand and supply
Role	Capital formation	Liquidity and price discovery

Functions of a stock exchange: liquidity and marketability; continuous price discovery; safety of transactions through clearing corporations; mobilising savings; barometer of the economy; corporate-governance discipline through listing obligations.

SOLUTION Q2(b) Predictive analytics

Meaning: using historical data, statistical models and machine learning to estimate **what is likely to happen**.

How it works: define the outcome to predict → collect and clean historical data → select variables (features) → train a model (regression, decision trees, neural networks, time-series) → validate on test data → deploy and score new cases → monitor and retrain.

Finance examples: credit scoring and probability of default; cash-flow and sales forecasting; customer churn; fraud detection; predicting late payment by debtors.

SOLUTION Q3(a) Kappa Ltd. – ratios

Ratio	Working	Result
Current ratio	(8 + 9 + 3 + 3) ÷ (6 + 4)	2.3 : 1
Quick ratio	(23 − 8 − 3) ÷ 10	1.2 : 1
Debt-equity	15 ÷ (20 + 10)	0.5 : 1
Interest coverage	9 ÷ 1.5	6 times
ROCE	9 ÷ (30 + 15)	20%
ROE	(9 − 1.5) × 0.75 ÷ 30	18.75%
Stock turnover	42 ÷ [(6 + 8) ÷ 2]	6 times
Debtors' collection period	9 ÷ 48 × 365	68 days

Liquidity is comfortable, leverage is low and ROE exceeds the after-tax cost of debt (7.5%), so trading on equity is favourable; collection period of 68 days is long and should be tightened.

SOLUTION Q3(b) Trend analysis (2023-24 = 100)

Item (₹ lakh)	2023-24	2024-25	2025-26	Trend 24-25	Trend 25-26
Sales	100	120	150	120.0	150.0
Cost of goods sold	70	86	105	122.9	150.0
Gross profit	30	34	45	113.3	150.0
Operating expenses	15	17	21	113.3	140.0
EBIT	15	17	24	113.3	160.0

Comment: in 2024-25 costs rose faster than sales and squeezed gross profit; in 2025-26 cost control improved and operating expenses grew slower than sales, so EBIT rose 60% against a 50% rise in sales.

SOLUTION Q4(a) Cost of equity and YTM

(i) Ke = 7 + 1.3 × (13 − 7) = **14.8%**.

(ii) Pre-tax YTM ≈ [100 + (1,000 − 950) ÷ 5] ÷ [(1,000 + 950) ÷ 2] = 110 ÷ 975 = **11.28%**. After-tax YTM ≈ [75 + 10] ÷ 975 = **8.72%**.

SOLUTION Q4(b) Marginal cost of capital

Break point (retained earnings) = 15 ÷ 0.50 = **₹30 lakh**; break point (debt) = 9 ÷ 0.30 = **₹30 lakh**.

Total new funds	Equity	Preference	Debt	WACC
Up to ₹30 lakh	0.5 × 14 = 7.00	0.2 × 11 = 2.20	0.3 × 8 = 2.40	**11.60%**
Above ₹30 lakh	0.5 × 15.5 = 7.75	0.2 × 11 = 2.20	0.3 × 9 = 2.70	**12.65%**

SOLUTION Q5(a) Equivalent annual cost

Machine	PV of costs	EAC
P	6,00,000 + 1,20,000 × 2.402 = 8,88,240	8,88,240 ÷ 2.402 = **₹3,69,792**
Q	9,00,000 + 1,00,000 × 3.605 = 12,60,500	12,60,500 ÷ 3.605 = **₹3,49,653**

Buy **machine Q** – lower equivalent annual cost.

SOLUTION Q5(b) Certainty-equivalent NPV

Year	Cash flow	CE	Certain cash flow	PVF 6%	PV
1	4	0.9	3.6	0.943	3.3948
2	5	0.8	4.0	0.890	3.5600
3	6	0.7	4.2	0.840	3.5280
Total					10.4828

NPV = 10.4828 − 10 = **₹0.48 lakh** → accept. Risk is handled through the CE coefficients, so the risk-free rate is used for discounting.

SOLUTION Q6(a) Cash-discount proposal

New average collection period = 0.6 × 10 + 0.4 × 30 = **18 days**.

Particulars	₹
Investment in debtors now (50 lakh × 70% × 45 ÷ 360)	4,37,500
Investment proposed (50 lakh × 70% × 18 ÷ 360)	1,75,000
Saving in cost of funds (2,62,500 × 15%)	39,375
Saving in bad debts (1,00,000 − 50,000)	50,000
Less: cost of discount (50 lakh × 60% × 2%)	(60,000)
Net gain	**29,375**

Adopt the cash-discount policy.

SOLUTION Q6(b) Cash models

(i) Baumol: C = √(2 × 72,00,000 × 200 ÷ 0.08) = **₹1,89,737**; conversions = 72,00,000 ÷ 1,89,737 ≈ **38 a year**.

(ii) Miller–Orr: spread = 3 × [(¾ × 150 × 40,00,000) ÷ 0.00025]^(1/3) = **₹36,493**; return point = 50,000 + 36,493 ÷ 3 = **₹62,164**; upper limit = 50,000 + 36,493 = **₹86,493**.

SOLUTION Q7(a) NI and NOI approaches

Particulars	NI (Ke 15%)	NOI (Ko 12%)
EBIT	6,00,000	6,00,000
Interest	2,00,000	2,00,000
Value of equity	4,00,000 ÷ 0.15 = 26,66,667	50,00,000 − 20,00,000 = 30,00,000
Value of firm	26,66,667 + 20,00,000 = 46,66,667	6,00,000 ÷ 0.12 = 50,00,000
Ko / Ke	Ko = 6 ÷ 46.67 = **12.86%**	Ke = 4 ÷ 30 = **13.33%**

Under NI more debt lowers Ko and raises value; under NOI Ko is constant and Ke rises with leverage.

SOLUTION Q7(b) MM with corporate taxes

Interest is tax-deductible, so debt creates a **tax shield**; the levered firm is worth more by the present value of the shield (D × t for permanent debt). Ke of the levered firm rises with leverage, but WACC falls.

V_U = 10,00,000 × 0.75 ÷ 0.125 = **₹60,00,000**

V_L = 60,00,000 + 20,00,000 × 0.25 = **₹65,00,000**

SOLUTION Q8(a) Dashboards

A dashboard is a single-screen visual display of the key performance indicators needed to monitor an objective, usually updated automatically from source data.

Types: strategic (long-term KPIs for top management – ROCE, market share); operational (real-time monitoring – daily cash, orders, production); analytical (trends and drill-down for analysts); tactical (mid-level, departmental progress against plans).

Features of a good dashboard: few, relevant KPIs with targets; right chart for each metric; consistent colours and layout; exceptions highlighted; filters and drill-down; refreshed automatically; mobile-friendly; data sources and definitions documented.

SOLUTION Q8(b) XBRL

Meaning: eXtensible Business Reporting Language – an XML-based standard that tags each item of a financial report with an element from a **taxonomy**, making the report machine-readable.

Benefits: faster and cheaper analysis; comparability across companies; fewer re-keying errors; better regulatory monitoring; reuse of data for many reports.

India: MCA requires XBRL filing of financial statements by listed companies and other prescribed classes of companies (Ind AS and AS taxonomies); cost audit reports are filed in XBRL (Form CRA-4); stock exchanges use XBRL for listed-entity filings VERIFY.