Module 10 · Management Reporting Issues and Analysis P17 · topics

10.1–10.11

SM pp. 433–490. **89 marks in 7 papers.** Since Jun'24 the **Q1(b) 10-mark case (5 MCQs × 2)** is always a Module 10 computation, and Q7(b) is often a Module 10 theory question. The theory is short; the marks are in the **formulas**.

Paper	What was asked	Marks
Jun'23 · Dec'23	MCQ contribution · MCQ labour productivity KPI · Q7(a) **net margin, ROA, ROE, turnover ratios** (= MQP Q1(b) data)	2 · 2 + 7
Jun'24	Q1(b) case: **cash operating cycle, current, quick, sales to working capital** (10.8) · Q7(b) **productive vs allocative efficiency**	10 + 7
Dec'24	Q1(b) case: COGS from stock turnover, sales, PAT, PBT (10.7) · Q4(a) **cement plant capacity utilisation: comment and suggest** (= SM GACAP Illustration 2; PTP Q4(a))	10 + 7
Jun'25	Q1(b) case: **divisional sales and profit** (10.11; = PTP Q1(b)) · Q7(b) **capacity utilisation analysis as a management-audit tool**	10 + 7
Dec'25	Q1(b) case: **fixed / variable factory overhead per unit, cost and profit per unit** (10.6)	10
Jun'26	Q1(b) case: **cost at 60% capacity, export order cost, profit and minimum price** (10.3) · Q7(b) **performance analysis + metrics** (= MQP Q7(b) word for word)	10 + 7

HOW IT IS EXAMINED · DEC'26 PREDICTION

- **Q1(b), 10 marks, certain**: one numeric case. Not yet used: **ratios** (ROA, ROE, margins: the MQP's case) and **working capital** again; also contribution / break-even and capacity pricing. Learn every formula on the last page.
- **Q7(b), 7 marks, likely**: **manpower planning approaches** (PTP; never asked), capacity utilisation, productive vs allocative efficiency, performance analysis steps, management accounting tools.
- A capacity case like Dec'24 Q4(a): compare rated capacity achieved, utilisation, stoppage hours; give reasons and suggestions.

MAP

1. 10.1 Reports: types ★
2. 10.2 + 10.10 Performance analysis ★★
3. 10.3 Capacity utilisation ★★★
4. 10.4 Productivity, productive vs allocative ★★
5. 10.5 Energy efficiency ★
6. 10.6–10.7 Contribution, profitability ★★
7. 10.8 Working capital and liquidity ★★★
8. 10.9 Manpower analysis ★★
9. 10.11 Management accounting tools ★
10. Q1(b) cases worked · formula sheet

10.1 Management reports

- SM WORDS Reporting is the communication of statements with related information between two parties; providing information to the management is **management reporting**; a report is a statement containing facts. The **purpose and level** of the user decide the **frequency, format and size** of a report (CFO vs National Sales Head example). [SM 433]
- Management audit reports: help take the right decision at the right time; build a control culture; analytical, from the company's database; suggest ERP reports (e.g. truck-wise **TAT**); **crisp** for top management, elaborate and action-oriented for middle and junior levels; special assignments. [SM 433–434]
- **By purpose:** (a) **financial** (cash flow, borrowing cost, performance vs budget); (b) **information** reports: **trend, analytical, activity** (SM MCQ 1: all of the above), segment reports; (c) **control** reports for responsibility centres. [SM 434]
- **By nature: enterprise** reports (for external users) · **investigative** reports (for a particular problem). **Functional:** individual activity report · joint activity report (e.g. central procurement with projects). [SM 434–435]
- Good reports: **accurate**, **purposive**, the right **detail**; a **balanced scorecard** turns strategy into quantifiable goals. [SM 474]

10.2 Performance analysis (+ 10.10) · Jun'26 Q7(b) = MQP Q7(b)

- SM WORDS A performance analysis is an **evaluation of how a business or individual has performed within the limited timeframe against set parameters**; variations from projected metrics are studied to pre-empt future failure. [SM 436]
- **What it includes:** parameters to measure against; past parameters and yardstick; no change in them;
- **Business metrics:** income by product line, region, type; **return on sales and on investment**; **profit and sales per employee**; ratios of assets, liabilities and net worth; goals for **three, five and 10 years**; market share; regular review of costs. **Individual:** sales metrics, projects completed by a deadline, contribution to projects. [SM 469–470]

measurement of actual delivery; assumptions (micro, macro); base-level adjustments; monitoring and review; **equal periods** for evaluation; **root cause** analysis of deviations; **feedback** to employees. [SM 436]
- **Who benefits:** employees grow; clear expectations; a better process means better results. [SM 469]

- **Steps for a department or organisation:** (1) **variance analysis** (projected vs actual); (2) **research variances** (root cause); (3) **analyse metrics** (non-financial); (4) **review competitor performance** (SWOT); (5) **decide on changes**. [SM 470]

10.3 Capacity utilisation analysis · Jun'25 Q7(b), Dec'24 Q4(a), Jun'26 Q1(b)

- SM WORDS Capacity utilization is the relationship between the **output produced and the potential output** with the given resources. **Capacity utilization = actual output ÷ maximum output × 100**; e.g. 20,000 of 40,000 = **50%**. Low utilisation = "excess", "surplus" capacity or under-utilisation. [SM 437]
- A **Key Performance Area of operational efficiency**: how well plant, building, land, materials, manpower and utilities are used. Higher utilisation → better use of resources and **lower fixed cost per unit**, better profitability. [SM 437]
- Indian cement: industry capacity above demand; some players run above 100%, some below 70%. [SM 437]

- **Low utilisation → reasons and remedies:** machine breakdown → better maintenance; losing market share → new or improved products through R&D; raw material shortage → new vendors or own plant after cost-benefit analysis; power shortage → wind mills or solar. [SM 437–438]
- **Economic significance:** capacity is built for projected demand; utilisation shows operating efficiency and **cost structure**; higher output → lower average cost → competitive edge; low utilisation = **opportunity loss** as fixed cost is not recovered. [SM 438]
- **Dec'24 Q4(a) / PTP Q4(a) method** (SM GACAP Illustration 2): rated capacity achieved = hourly output ÷ rated (72/80 = 90% → 64/80 = 80%); utilisation fell 82.48% → 62.21%; breakdown hours up 114.48%; planned maintenance down; no-order hours up; total stoppage 4,230 → 4,948 hours. **Suggest:** proper maintenance, secure orders, more wagons, cost-benefit of **captive power**. [SM 272–273]

10.4 Productivity and efficiency · Jun'24 Q7(b)

- **Productive efficiency** (production efficiency): the largest possible output from the available resources. **Production possibility frontier (PPF)**: a curve of the output limits of two products competing for the same finite resources; more of one means less of the other. [SM 439]
- SM WORDS **Productive efficiency** represents the **maximum output of a product given scarce resources**; each extra unit has an opportunity cost; it focuses on **monetary costs and resources**. **Allocative efficiency** measures the **distribution of goods and services**: a market equilibrium where **marginal cost of production = marginal benefit to the customer**; both producer and consumer benefit. Both are limited by externalities. [SM 439–440]

- Productivity = **output per unit of input**: less input per unit of output; more output with the same input. [SM 440]
- **Auditor's levers:** raw materials (superior material if lower usage offsets price; new vendors; approved vendors; avoid emergency purchase; maintain plant); electricity (energy-efficient replacements after cost-benefit; **variable frequency drives**; plant modification; run at optimum capacity; shop-floor suggestions); steam (cut kettle hours and cycle time; insulate to cut transmission losses). [SM 440]

10.5 Utilities and energy efficiency (also the MQP / postal "energy audit" question)

- **Energy efficiency** = using **lesser energy to provide the same product or service**; with renewables, one of the **twin pillars** of sustainable energy policy. IEA: efficiency could cut world energy needs by **30%** by 2050. [SM 441]
- **Auditor looks at:** energy per unit of fuel; trend of energy cost as % of product cost; recycling; better capacity utilisation; replacing plant after cost-benefit and payback; VFDs; pump modification; efficient motors; redesigned piping; wind mills or solar. [SM 441–442]

- Examples: thin-slab and direct casting in steel; **CHP / cogeneration**; LEDs save over **75%**; recycled aluminium saves **95** percent of energy; recycled paper uses **60** percent of the energy. [SM 442–444]
- **Barriers:** fear of high initial investment; unclear benefits; little concern for environmental impact; "old is gold". [SM 444]

10.6–10.7 Contribution and profitability analysis · Dec'25 Q1(b), Jun'23 MCQ

- **Contribution analysis**: the effect of variable costs on net income; contribution margin = contribution ÷ sales, per

- **Profitability analysis**: part of ERP; systematically analyses profits from each revenue stream; finds the most and least

product or line; a product with a low margin that cannot be improved may be dropped; shows how each unit recovers fixed cost. [SM 445]

- **Contribution per unit = (total revenue − variable costs) ÷ units sold**: shirts (4,00,000 − 1,50,000 − 1,00,000) ÷ 15,000 = **₹10.00**. **Break-even = fixed cost ÷ contribution per unit. Margin of safety** = (target − break-even) ÷ target. P/V chart for non-technical managers. [SM 445–446]
- Limits: assumes constant selling price and linear costs. [SM 446]

profitable products; methods: **profitability ratios** (operating margin, **ROA, ROE**, EBIT), **customer-cluster** profitability, qualitative analytics. [SM 447]

- **Product rationalisation: sales-to-stock ratio = net sales ÷ average inventory**; **gross margin = gross profit ÷ net sales**. Auditor's table: sales ↑, raw material and utilities cost ↓, contribution ↑, fixed cost → optimum capacity, profitability ↑. [SM 448]

10.8 Working capital and liquidity · Jun'24 Q1(b) = the SM's Topple Co example with new figures

- Working capital = net current assets for day-to-day operations; central because current assets are a large share of assets, **wealth follows cash** not profit, and poor control is a major cause of collapse. Objectives: **liquidity** vs return (ROCE). Extremes: **over-trading** (too little working capital, under-capitalisation) and **over-capitalisation** (too much). [SM 449]
- **Current ratio** = CA ÷ CL (below 1 may signal trouble; traditional manufacturers 2 or more; big retailers below 1). **Quick ratio** = (CA − inventory) ÷ CL. [SM 449–450]

- **Inventory days** = average inventory ÷ cost of sales × 365 · **receivables days** = receivables ÷ sales × 365 · **payables days** = payables ÷ credit purchases × 365 · **sales to working capital** = sales ÷ (inventory + receivables − payables). [SM 450–451]
- SM WORDS **Cash operating cycle = inventory days + receivables days − payables days** (raw material, WIP and finished goods days in manufacturing). Industry average: 53 + 23 − 47 = 29 days. [SM 451, SM 453]
- Also: raw material inventory in days of consumption; finished goods in days of production or sales. [SM 451]

10.9 Manpower analysis · PTP Q7(b) "approaches to manpower planning" (never asked yet)

- Depth depends on the share of manpower cost in total cost. **Ratios to watch:** (1) training expenses per employee; (2) production per employee or hour (training, plant condition, skills); (3) resignations; (4) new recruitments; (5) labour productivity in numbers, man hours or wages. [SM 454]
- **Dimensions of manpower estimation:** (a) employees available, types, wages; (b) job description per position; (c) age, qualification, experience; (d) **short, medium, long-term** needs. Basis: **annual budget and long-term corporate plan**; techniques: managerial judgement, **ratio-trend**, **Delphi**. [SM 455]
- Objectives (seven): adequate quantity and quality; lower recruiting and replacement costs; lower attrition costs; morale; control expansion or reduction; monitor staffing and retention; focus training. [SM 455]

APPROACHES FOR DEVELOPING MANPOWER PLANNING (THE PTP ANSWER)

1. **Planning for the status quo**: replace those promoted or leaving; **succession planning**.
2. **Thumb rule**: e.g. one supervisor per 12 workmen (1:12).
3. **Markov analysis**: predicts manpower per category and transitions (resignation, dismissal, retirement, death).
4. **Unit forecasting**: supervisors' unit-wise estimates added up ("bottom-up").
5. **Ratio trend analysis**: six people for the work → twelve for twice the work; direct to indirect ratio.
6. **Delphi method**: independent expert judgements by questionnaire.
7. **Computer simulation** of organisational processes and HR movement.
8. **Time and motion study** by an industrial engineer.
9. **MOST** (Maynard Operation Sequence Technique, H.B. Maynard, 1970s): activity-based work measurement; used in automobiles.

[SM 466–467]

Advantages: anticipates shortages and surpluses; right recruitment sources; training needs; performance appraisal; **controls labour cost**; career development; tackles low productivity, absenteeism, conflict. **Peter Principle**: every post tends to be filled by someone incompetent for it. [SM 466–468]

10.11 Management accounting tools

- **Typical tools: break-even** (total cost = total revenue) · **capital budgeting** · **constraint analysis** (bottlenecks) ·

- **Fifteen explained:** financial planning · financial statement analysis · cost accounting · fund flow · cash flow · standard

inventory analysis · **margin analysis** (by customer, region, product, branch) · **transaction analysis** · **trend analysis**. [SM 471]

- **Five groups:** (1) financial accounting: ratios, comparative statements, fund and cash flow, ROCE; (2) cost accounting: marginal and differential costing, standard costing, variances; (3) mathematics: OR, linear programming, network, queuing, games, simulation; (4) future information: budgets, budgetary control, forecasting, project appraisal; (5) misc.: reporting, integrated audit, financial planning, revaluation, decision accounting, MIS. [SM 471–472]

costing · **marginal costing** (pricing, sales mix, scarce resources, make or buy, bulk and foreign orders) · budgetary control · revaluation accounting · decision-making accounting · MIS · statistical techniques · management reporting · historical cost accounting · ratio analysis. [SM 472–474]

- Ratio analysis: compare logically related values (bad debts to turnover, not to fixed assets). [SM 474]

Q1(b) The 10-mark case: three past cases worked

JUN'26 Q1(b) · 60% CAPACITY, TURNOVER ₹90 LAKH, EXPORT ORDER TAKES 40% (PRICING AT SPARE CAPACITY)

Working (₹ lakh)	Domestic (60%)	Export (40%)
Prime cost (60% of sales / given)	54.00	14.00
Factory overhead (17.00 at 60%; extra = 24.50 − 17.00)	17.00	7.50
Admin and selling (fixed: no extra) · shipping	10.00	2.50
(xi) / (xiii) Total cost of sales	**81.00 (A)**	**24.00 (B)**
(xii) Profit 9 ÷ 90 = profit % on sales	10% (A)	
(xv) Price at the same 10% on sales = 24.00 ÷ 0.90 · (xiv) profit		26.67 (C) · 2.67 (B)

DEC'25 Q1(b) · OVERHEAD PER UNIT

Fixed OH rate = 75,000 ÷ 25,000 hours = ₹3 per hour; 3 hours per unit.
(xi) fixed OH per unit = 3 × 3 = **₹9.00 (A)**
(xii) variable = (11.50 − 3) × 3 = **₹25.50 (C)**
(xiii) total = 11.50 × 3 = **₹34.50 (D)**
(xiv) total cost = 75 + 55 + 34.50 + 8 = **₹172.50 (B)**
(xv) profit = 225 − 172.50 = **₹52.50 (C)**

JUN'24 Q1(b) · T LTD (TOPPLE CO METHOD)

Cost of sales = 40 lakh × 70% = 28 lakh.
Inventory days 4.5 ÷ 28 × 365 = 58.7; receivables 3.2 ÷ 40 × 365 = 29.2; payables 2.5 ÷ 32 × 365 = 28.5 → (i) cycle **59 days (B)**
(ii) CR = 7.7 ÷ (2.5 + 4.5 overdraft) = **1.10 (A)**
(iii) QR = 3.2 ÷ 7.0 = **0.46 (B)**
(iv) sales ÷ (4.5 + 3.2 − 2.5) = **7.69 (C)**
(v) **(A)**: cycle longer than the industry's, liquidity risk (the industry cycle is 53 + 23 − 47 = 29 days).

Dec'24 Q1(b) built sales and profit backwards from **stock turnover** (COGS = turnover × average stock; sales = COGS ÷ (1 − GP%)); **Jun'25 Q1(b) = PTP Q1(b)**: divisional sales and profit with transfer prices. **The MQP's case** (not yet in an exam) is Dec'23 Q7(a) data: net profit margin, ROA, ROE, asset turnover.

Formula sheet	=	Formula sheet	=
capacity utilisation	actual ÷ maximum output × 100	current ratio	CA ÷ CL
contribution per unit	(revenue − variable cost) ÷ units	quick ratio	(CA − inventory) ÷ CL
break-even units	fixed cost ÷ contribution per unit	inventory days	avg inventory ÷ cost of sales × 365
margin of safety	(sales − BEP) ÷ sales	receivables days	avg receivables ÷ sales × 365
gross margin	gross profit ÷ net sales	payables days	avg payables ÷ credit purchases × 365
sales-to-stock	net sales ÷ average inventory	cash operating cycle	inventory + receivables − payables days
ROA · ROE	net profit ÷ assets · ÷ equity	sales to working capital	sales ÷ (inventory + receivables − payables)

SM exercise case 1 (per unit: sale 1,00,000; RM 50,000, utilities 15,000, packing 5,000 = variable; employee 5,000, stores 4,000, repairs 3,000, depreciation 5,000, insurance 1,000, overheads 2,000 = fixed): variable **70,000**, fixed **20,000**, contribution **30,000**, profit **10,000**, RM % of total cost **55.56**. **Case 2:** variable = raw material; ageing of plant and OEM spares → consumable stores; fixed asset register → depreciation; discretionary → overheads. [SM 487–489]