FINAL EXAMINATION **SET - 1**

MODEL QUESTION PAPER **TERM – JUNE 2026**

PAPER – 16 **SYLLABUS 2022**

STRATEGIC COST MANAGEMENT

Time Allowed: 3 Hours **Full Marks: 100**

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

SECTION – A (Compulsory)

1) Choose the correct answer from alternatives given: **[15 × 2=30]**

(i) ROB Ltd., has estimated the unit contribution of Product Z to be ₹10. Budgeted Sales for the year are 25000 units. Estimated fixed Costs are follows:

Fixed Cost P. A. (₹)	100000	150000	20000	300000
Probability	0.20	0.25	0.40	0.15

What is the probability that the company will equal or exceed the target profit of ₹ 48,000?

(A) 85 %
(B) 55 %
(C) 40 %
(D) None of the above

(ii) TUSN Ltd., maintains Margin of Safety (MOS) of 20% on its current sales and earns a profit of ₹ 30 Lakh per annum. If the company has P/V Ratio of 25 %, its current sales will be

(A) ₹ 800 Lakh
(B) ₹ 600 Lakh
(C) ₹ 400 Lakh
(D) ₹ 500 Lakh

iii) BOSS Ltd. operates a marginal costing system. For the forthcoming year, variable costs are budgeted to be 60% of sales and fixed costs are budgeted to be 10% of sales. If selling price is increased by 10% and fixed costs, variable costs and sales volume remain unchanged, the effect on contribution will be

(A) a decrease of 2%
(B) an increase of 5%
(C) an increase of 10%
(D) an increase of 25%

iv) A company uses two activities for overhead allocation: Machine setups (cost ₹60,000, 300 setups) and Quality inspections (cost ₹40,000, 200 inspections). Product A requires 30 setups and 20 inspections. What is the overhead allocated to Product A?

(A) ₹6,000
(B) ₹8,000
(C) ₹10,000
(D) ₹12,000

v) The budgeted production of a company is 20,000 units per month. The standard cost sheet is as under: Direct materials: 1.5 kgs. @ ₹ 6 per kg, Direct labour: 6 hours @ ₹5 per hour, Variable overheads: 6 hours @ ₹ 4 per hour, Fixed overheads: ₹ 3 per unit, Selling price: ₹72 per unit
Actual production and sales for the month is 18,750 units.

The Sales volume variance (in gross margin) is:

(A) ₹ 7800 (F)
(B) ₹ 9000 (F)
(C) ₹ 7500 (A)
(D) None of the above

vi) A transport company must move 100 units from two plants (P1: 40 units, P2: 60 units) to two warehouses (W1: 50 units, W2: 50 units). Costs per unit: P1→W1 ₹4, P1→W2 ₹6, P2→W1 ₹5, P2→W2 ₹3. What is the minimum total transport cost?

(A) ₹460
(B) ₹470
(C) ₹480
(D) None of the above

vii) Two firms A and B compete on pricing. Payoff matrix (profit for A in ₹000) is:

	B: Low Price	B: High Price
A: Low Price	80	120
A: High Price	60	100

What is the Maximin strategy payoff for Firm A?

(A) 60
(B) 80
(C) 100
(D) 120

viii) For a learning curve percentage of 72%, the time to be taken to complete the 4th unit of a job involved in the assembly line, if the initial unit requires 80 hours, will be

(A) 41.47 hours
(B) 43.50 hours
(C) 46.71 hours
(D) 40.95 hours

ix) Which of the following tools for Statistical Data Analysis is used most commonly in the Social Sciences and is considered as easiest to learn among enterprise Statistical tools?

(A) SAS (Statistical Analysis System)
(B) E Views
(C) SPSS (Software Package for Statistical System)
(D) Microsoft Dynamics

x) Which of the following Quality Cost (s) is / are incurred in Warranty replacements?

(A) Appraisal Costs
(B) Prevention Costs
(C) Internal failure Costs
(D) External failure Costs

xi) Which of the following decision making techniques is a technique that determines the best pricing policy for optimizing profits?

(A) Cost leadership
(B) Yield Management
(C) Kaizen Costing
(D) Life Cycle Costing

xii) Which of the following is a critical requirement for successful JIT implementation?

(A) Large safety stocks
(B) Long supplier lead times
(C) Close supplier relationships and frequent deliveries
(D) Higher inspection costs

xiii) Which of the following variances denotes the deviation between revised proposition and the actual incidence ?

(A) Planning variance
(B) Revenue Variance
(C) Operating Variance
(D) Controllable Variance

xiv) A major risk in implementing Business Process Reengineering is

(A) Over dependence on Information Technology
(B) Increase in product prices
(C) Reduced market share
(D) Employee resistance to change

xv) Marketing department of RON Ltd. estimates that 40,000 of new mixers could be sold annually at a price of ₹60 each. To design, develop and produce these new mixers an investment of ₹40,00,000 would be required. The company desires a 15% return on investment (ROI). Given these data, the target cost to manufacture, sell, distribute and service one mixer will be

(A) ₹37.50
(B) ₹40.00
(C) ₹45.00
(D) ₹48.60

SECTION – B

Answer any 5 questions out of 7 questions given. Each question carries 14 marks. [5 × 14 = 70]

2) Apex Electricals Ltd. produces Product 'A' for which the company has an assured market. The output has been budgeted at 1,20,000 units at 92% capacity utilisation. The cost sheet based on output (per unit) is as follows:

Particulars	₹
Selling Price	100
Direct materials	21
Component 'X'	9
Direct wages @ ₹ 5 per hour	20
Factory overheads (50% fixed)	24
Selling & distribution overheads (75% variable)	12
Administration overheads	4
Total Cost	90

The factory overheads are applied on the basis of direct labour hours.

The Board was of the view that steps should be taken to utilise the idle capacity to improve the profitability of the company. The following proposals were accordingly put up before the Board for consideration:

(i) An order has been received from abroad for 500 units of Product B per month at ₹ 120 per unit. The cost data are:

Direct materials ₹ 40 per unit, Direct labour 8 hours per unit, Selling and distribution overheads applicable to this product order are ₹ 10 per unit, and the Variable factory overheads are chargeable on the basis of direct labour hours.

(ii) The Company at present manufactures component 'X', one unit of which is required for each unit of Product 'A'. The cost details for 10,000 units of component 'X' are as follows:

Particulars	₹
Direct materials	24,000
Direct labour	30,000
Variable overheads	18,000
Fixed overheads	18,000
Total	90,000

The component 'X', however, is available for purchase at the market at ₹ 8.00 each.

(iii) In the event of the company deciding to purchase the component 'X' from the market, the company has two alternatives for the use of the capacity so released as under:

(a) Rent out the released capacity at ₹ 1 per hour.

(b) Manufacture component 'Y' which can be sold at ₹ 8.00 per unit. The cost data of this component for 10,000 units are:

Particulars	₹
Direct materials	30,000
Direct labour	15,000
Factory variable overheads	9,000
Other variable overheads	21,000
Total	75,000

Required:

(i) Prepare a statement showing the profitability of the company as originally envisaged in the budget.

(ii) Evaluate the export order and state whether it is acceptable or not.

(iii) Make an appraisal of the proposal to manufacture component 'X' and examine whether the component 'X' should be manufactured in the factory or purchased from the market. Assume that no alternative use of spare capacity is available.

(iv) Evaluate the alternative use of the spare capacity and state whether to manufacture or buy the component 'X', and if your decision is to buy the component 'X', which of the two alternatives for the use of spare capacity will you prefer? **[14]**

3) (a) TINY Ltd. has Profit Centre Division X and Y, making product A and B respectively. Each unit of B requires one unit of A and Y can sell a maximum of 50000 units in the external market at a selling price of ₹ 150 per unit. X has the capacity to produce 100000 units of A. The variable cost per unit is ₹ 12. Fixed costs are ₹ 720000. X can sell the following quantities in the external market:

Price per unit (₹)	Demand Units
18	84000
20	76000
22	70000
24	64000
26	54000 or less

Assume no stock build up for A or B.

Y can purchase its requirement from the external market at ₹22 per unit, but has to incur a bulk transportation cost of ₹ 1,50,000 for any quantity, which will not be incurred on transfer from X.

Required :

(i) Assuming no demand from Y Analyze what will be the best strategy for X.

(ii) Assess what will be the minimum transfer price that X will agree to if X has to supply 50000 units to Y.

(iii) Assess the maximum price that Y will offer. **[7]**

b) METCON manufactures a metal trimming device which has been sold at ₹16 per unit for a number of years. The selling price is to be reviewed and the following information is available on costs and likely demand:

Cost Estimates:

Variable Cost per unit:

	₹	Probability
Pessimistic estimates	11.00	0.5
Most Likely estimates	10.00	0.3
Optimistic estimates	9.50	0.2

Fixed Cost per unit:

	₹	Probability
Pessimistic estimates	90,000	0.2
Most Likely estimates	85,000	0.5
Optimistic estimates	82,000	0.3

Demand Estimates:

	Probability	Selling Price @ ₹17 per unit	Selling Price @ ₹18 per unit
Pessimistic estimates	0.2	21,000	19,000
Most Likely estimates	0.5	19,000	17,500
Optimistic estimates	0.3	16,500	15,500

It can be assumed that all estimates and probabilities are independent. You are required to

(i) Advise management whether they should alter the selling price and if so, the price you would recommend

(ii) Calculate the expected profit at the price you recommend and the resulting margin of safety expressed as a % of expected sales. **[7]**

4. (a) POXIM Ltd., has decided to adopt JIT Policy for materials. The following effects of JIT Policy are identified:

(i) To implement JIT, the company has to modify its production and material receipt facilities at a capital cost of ₹2,00,000. The new machine will require a cash operating cost ₹2,16,000 p.a. The capital cost will be depreciated over 10 years.

(ii) Raw material stockholding will be reduced from ₹40,00,000 to ₹15,00,000.

(iii) The company can earn 12% on its long-term investments.

(iv) The company can avoid rental expenditure on storage facilities amounting to ₹66,000 per annum. Property Taxes and Insurance amounting to ₹44,000 will be saved due to JIT programme.

(v) Presently there are 7 workers in the Store department at a salary of ₹10,000 each per month. After implementing JIT scheme, only 4 workers will be required in this department. Balance 3 workers' employment will be terminated.

(vi) Due to receipt of smaller lots of Raw Materials, there will be some disruption of production. The costs of stockouts are estimated at ₹1,54,000 per annum.

(vii) Since the supplier is new having no reputation as yet in the market, an additional inspection cost of ₹12,000 p.a. has to be incurred.

Required:

(I) Analyze the financial impact of the JIT Policy.

(II) Critically assess the situations and Advice the Management of POXIM Ltd., on implementation of Just-in Time (JIT) Policy. **[7]**

(b) "Value Analysis provides a structure through initiative in the direction of Cost saving, Cost reduction and Continuous improvement" – In this context, Align the important phases of Value Analysis. **[7]**

5. a) The following information relates to deployment of Labour in PKS Limited:

Type of Labour	Skilled	Semi-Skilled	Unskilled	Total
No. of workers in standard gang	4	3	2	9
Standard rate per hour (₹)	6	3	1	
Number of workers in actual gang	?	?	?	9
Actual rate per hour (₹)	7	2	2	

In a 40 hours week, the gang produced 270 standard hours. The actual number of semi-skilled workers is twice the actual number of unskilled workers. The rate variance of semi-skilled workers is ₹160 (F).

Required:

Assess the following Variances:

(i) The actual number of workers in each category
(ii) Total gang variance
(iii) Total labour rate variance
(iv) Total labour cost variance **[7]**

(b) A Factory of RAMO Ltd. using standard costing system, has normal capacity of 100 Machines working 8 hours per day of 25 days in a month of Year 2025.

The budgeted fixed overheads of a month are ₹1,50,000. The Standard time required to manufacture one unit of product is 4 hours. In a particular month the Company worked for 24 days of 750 machine hours per day and produced 4500 units of the product. The actual fixed overhead incurred were ₹1,45,000.

Required:

Assess the following Variances:

(i) Fixed overhead Expenditure Variance.
(ii) Fixed overhead Calendar Variance.
(iii) Fixed overhead Capacity Variance.
(iv) Fixed overhead efficiency Variance.
(v) Fixed overhead Cost variance.
(vi) Fixed overhead volume variance. **[7]**

6. (a) Madmax Variety Stores is interested to determine, how many advertisements to release in selected three magazines namely Stardom, Arrow and Fusion. Its main purpose is to advertise in such a way that exposure to principal buyers of its goods is maximized. Percentage of readers for each magazine are known. Exposure in any particular magazine is the number of advertisements released multiplied by the number of principal buyers. The following data are available:

Particulars	Magazine Stardom	Magazine Arrow	Magazine Fusion
Readers	1,00,000	60,000	40,000

Principal Buyers	30%	20%	10%
Cost per Advertisement	₹10,000	₹8,000	₹6,000

The budgeted amount at the most ₹2,00,000 for the advertisement. The Stores has already decided that Magazine Stardom should have no more than 14 advertisements and that Magazine Arrow and Magazine Fusion each gets atleast 8 advertisements.

Develop a Linear Programming Model for this problem. **[7]**

(b) BASIN Ltd., a manufacturing company has four JOBS (1, 2, 3, 4) and four Machines (M1, M2, M3 and M4). These Jobs can be processed on four Machines i.e. one Job on one Machine. Resulting Profits (₹) vary with assignments. They are given below:

JOBS	MACHINES			
	M_1	M_2	M_3	M_4
(1)	50	43	36	29
(2)	38	33	28	23
(3)	38	33	28	23
(4)	32	28	24	20

Required:

Analyze and assess the optimum assignment of Four Jobs to four Machines and corresponding Profits. **[7]**

7. (a) TRINT Ltd. a Publishing house has bought out a new monthly magazine, which sells at ₹37.5 per copy. The cost of producing it is ₹30 per copy. A Newsstand estimates the sales pattern of the magazine as follows:

Demand Copies	Probability
0 < 300	0.18
300 < 600	0.32
600 < 900	0.25
900 < 1200	0.15
1200 < 1500	0.06
1500 < 1800	0.04

The newsstand has contracted for 750 copies of the magazine per month from the publisher.

The unsold copies are returnable to the publisher who will take them back at cost less ₹4 per copy for handling charges.

The news stand manager wants to simulate of the demand and profitability. The following random numbers may be used for simulation:

27, 15, 56, 17, 98, 71, 51, 32, 62, 83, 96, 69.

Required:

(i) Allocate random numbers to the demand pattern forecast by the newsstand.

(ii) Simulate twelve months sales.

(iii) Analyze the monthly and annual profit / (Loss).

(iv) Assess the loss on lost sales. **[7]**

(b) TEXIS Ltd., a Civil Engineering Company has been offered a contract to construct and deliver a Project of Housing Apartment. From the specifications provided by the Developer, project manager of TEXIS Ltd has listed down the various activities and estimated times to be performed to construct the Housing Apartment as under:

Activities	DURATION TIME (DAYS)		
	Optimistic Time	Most likely Time	Pessimistic Time
1 – 2	3	6	15
2 – 3	6	12	30
3 – 5	5	11	17
7 – 8	4	19	28
5 – 8	1	4	7
6 – 7	3	9	27
4 – 5	3	6	15
1 – 6	2	5	14
2 – 4	2	5	8

Required:

(i) Develop the PERT Network and indicate all paths through it.

(ii) Analyze the critical path, expected time for completion of the project and project variance after estimating the earliest and latest event times of all nodes. **[7]**

8. a) When the price of a product X is ₹48, 70 units are demanded each week and when price is increased to ₹78, weekly demand reduced to only 40 units. The manufacturer's fixed costs are ₹ 1,710 a week and variable costs are ₹ 9 per unit.

(i) Establish the demand function.

(ii) Recommend a unit price which would maximise profit and find the quantity demanded at that price. **[7]**

(b) The production (in Thousand Tonnes) of a Sugar Factory of AURO Ltd. for the Year 2016 through 2024 are given below:

Year	2016	2018	2020	2022	2024
Production (in Thousand Tonnes)	18	21	23	27	16

Required:

(i) Fit a Straight-line Trend by the method of Least Squares.

(ii) Assess the estimated Production (in Thousand Tonnes) of Sugar in the year 2019 and year 2032. **[7]**