MULTIPLE CHOICE QUESTIONS (MCQs)

PART-A – STRATEGIC MANAGEMENT ACCOUNTING

1. Badar Limited has extracted the following data from a time-driven activity-based costing system designed for a customer service department:

Activity	Quantity	Time per unit (mins)	Total Allocated Time (mins)
Orders processing	9,500	30	285,000
Addressing customers complaints	200	300	60,000
Warrant claims	750	200	150,000

Total practical time available to department personnel is 625,000 minutes and the departmental budget for the period is Rs. 6,750,000.

Customer W has submitted 150 orders, made 5 complaints and submitted 12 warranty claims.

The cost of servicing customer W is ____________

A	Rs. 1,804
B	Rs. 8,400
C	Rs. 32,727
D	Rs. 90,720

Reference :Traditional vs Modern Manufacturing Philosophy- Apply the techniques of activity based management in identifying multiple cost drivers/activities

2. Bedford Limited with a 10% cost of capital is considering the purchase of two machine tools, M and N. Both can produce the same component at identical rates per working hour and the relevant data on the machines is as follows:

	Machine M	Machine N
Capital cost (Rs.)	1,500,000	2,400,000
Operating costs per working hour : (Rs. Per hour)		
Energy	45	75
Consumables	90	120
Variable overheads	90	105
Maintenance costs		
Service intervals (yearly)	12	10
costs of services (Rs.)	15,000	12,000
Random breakdowns	3	1
Cost of breakdowns (Rs.)	30,000	45,000
Expected Availability		
(working hours per annum)	1,500	2,000
Contribution from production per hour		
(excluding mc. Costs) (Rs.)	750	750
Expected Life (years)	5	5
Net salvage value at the end of year-5 (Rs.)	150,000	375,000

Which machine is preferable for Bedford Limited?

A	Machine M, Rs. 517,500
B	Machine N, Rs. 735,920
C	Machine M, Rs. 855,000
D	Machine N, Rs. 619,260

Reference :Cost Planning- Life Cycle Costing

3. Trolex Limited is the manufacturer of smart watches. The company is preparing a product life cycle budget for a new smart watch YU-69. Development on the new watch is to commence shortly. Estimates for YU-69 are as follows:

Life-cycle units manufactured and sold	400,000
Selling price per watch (Rs.)	60,000
Research and Development Costs	1,500,000,000
Manufacturing:	
Variable cost per watch **(Rs.)**	22,500
Variable cost per batch **(Rs.)**	900,000
Watches per batch	500
Fixed costs **(Rs.)**	2,700,000,000
Marketing: (Rs.)	
Variable cost per watch	4,800
Fixed costs	1,500,000,000
Distribution:	
Variable cost per batch **(Rs.)**	420,000
Watches per batch 160	
Fixed costs **(Rs.)**	1,080,000,000
Customer-service cost per watch **(Rs.)**	2,250

Ignoring time value of money, calculate the percentage of the budgeted total life-cycle costs that will be incurred by the end of the R & D and design stages.

A	7.36%
B	7.70%
C	8.13%
D	8.46%

Reference : Cost Planning- Life Cycle Costing

4. Salman Limited is engaged in the manufacturing of two products, A and B that go through same manufacturing process. The company uses activity costing method for allocating the overheads to its products. The production data related to both the products is as under:

	A	**B**
Quantity produced	30,000	10,000
Material cost per unit	Rs.750	Rs.3,000
Direct Labour hours per unit	0.75	0.75
Direct Labour cost per direct labour hour	Rs.1,800	Rs.1,800
Machine hours per unit	3 hours	9 hours
Set-ups period	40	60
Orders handled per period	50	200

Total Manufacturing overheads costs	**Rs.**
Relating to machine activity	45,000,000
Relating to production run set-ups	7,500,000
Relating to order handling activity	10,500,000
	63,000,000

The Full production cost per unit of Product A is ______________.

A	Rs.920
B	Rs. 3,020
C	Rs.3,675
D	Rs. 7,890

Reference : Traditional vs Modern Manufacturing Philosophy- Apply the techniques of activity based management in identifying multiple cost drivers/activities

5. Pendulum Limited manufactures three products which have the following cost of demand data:

	Product-M	Product-N	Product-P
Contribution to sales ratio	20%	25%	30%
Maximum sales value (Rs.000)	160,000	200,000	300,000
Minimum sales value (Rs.000)	20,000	20,000	20,000

There are fixed costs of Rs. 140,000,000 per period.

The lowest breakeven sales value per period, subject to meeting the minimum sales value constraints, is nearest to:

A	Rs. 464,000,000
B	Rs. 476,000,000
C	Rs. 504,000,000
D	Rs. 524,000,000

Reference :Multi-Product Breakeven Analysis- Analyze the sales product mix decisions

6. Zest Limited manufactures two products G and H. The details for the year 2020 are shown below:

	Product-G Rs.	**Product-H Rs.**
Selling price	4,000	2,000
Variable cost	2,400	800

Total fixed costs are Rs. 46,000,000 per annum.

The company sells the two products in the sales value ratio of 7:3 and is operating at a margin of safety of 20%. During the next year. 2021, the company anticipates that the variable costs of product G and H will go up 5% and 2.5% respectively. The fixed expenses will also go up by 5%.

The quantity of product G and H sold in 2020 are:

A	17,500 units and 15,000 units
B	20,575 units and 16,500 units
C	17,500 units and 18,750 units
D	21,875 units and 18,750 units

Reference : Multi-Product Breakeven Analysis- Determine the optimal mix of product

7. Scholes printing press is in the business of publishing a leading magazine which has a wide customer base. It measures quality of service in terms of print quality, on time delivery and number of damaged and unsold magazines. In order to improve its business prospects and performance, the company is considering installing a scheduling and tracking system which involve an annual additional cost of Rs. 4,500,000 besides equipment costing Rs. 6,000,000 needed for installation of system.
To purchase the equipment, Scholes is planning to utilize the proceeds of an investment fetching an annual income of 10%.
Details regarding the present and future performance are given below:

	Present	Expected
On-time delivery	87%	95%
Variable cost per lot of magazines damaged or unsold	600	600
Fixed cost	750,000	750,000
Number of lots of magazines damaged or unsold	6,500	1,500

It is expected that each percentage increase in on time performance will result in revenue increase of Rs. 540,000 per annum. Required contribution margin is 45%.

The net benefit/ loss of installing the new system by Scholes printing press will be:

A	Rs. 2,916,000
B	Rs. 3,156,890
C	Rs. 600,000
D	Rs. 816,000

Reference : Short term Decisions- make or buy decisions

8. HTM Limited manufactures a single product that requires two components. The company purchases one of the components from two suppliers, KT Limited and GF Limited. The price quoted by KT Limited is Rs. 2,700 per hundred units of components and it is found that on average 4% of the total receipts from this supplier is defective. The corresponding quotation from GF Limited is Rs. 2,610 per hundred units, but the defective would go up to 6%. If the defectives are not detected, they are utilized in production causing a damage of Rs 2,700 per hundred units of the component.

HTM limited intends to introduce a system of inspection for the components on receipt. The inspection cost is estimated at Rs. 360 per hundred units of the components. Such inspection will be able to detect only 90% of the defective components received. No payment will be made for components found to be defective in inspection.

Assuming total requirement is 100,000 units of the components, if inspection at the point of receipt is undertaken which of the two supplier should be asked to supply.

A	GF Limited, Rs. 30.263
B	KT Limited, Rs. 29.432
C	GF Limited, Rs. 30.975
D	KT Limited, Rs. 29.250

Reference : Short term Decisions- acceptance/ rejection of contracts

9. Sialkot Sports Club Limited (SSCL) is engaged in the manufacturing of hockey sticks. Following table shows the budgeted figures for the coming year:

	Rs. Per unit
Selling price	7,200
Components (1 set)	1,800
Assembling costs	3,000
Delivery cost	1,200
Contribution	**1,200**

Market is intensely competitive where SSCL currently holds 35% market share. Annual demand of theses sticks is 150,000 units.
On reviewing previous performance it is revealed that 4% of the sticks supplied to customers were returned for free replacement because of faults. Defective components, which are initially bought in to assembling process, are held responsible for this. These returned sticks cannot be repaired and have no scrap value. Supply of faulty sticks to customers could be eliminated by implementing an inspection process immediately before the goods are delivered. This would improve customer perception thus resulting in an increase of 7% in current market share (making in all a total share of 42%).

The quality non-conformance cost for the coming year, based on the budgeted figures and sales returns rate would be:

A	Rs. 13,128,000
B	Rs. 2,630,400
C	Rs. 10,497,600
D	Rs. 75,600,000

Reference : Cost Management Techniques- Total Quality Management

10. Generous Health care centre has a fixed costs of Rs. 1,080 million per year and variable costs of Rs. 12,000 per patient day. Daily revenues vary among classes of patients. The two classes are: self-pay patients (S) who pay an average of Rs. 20,000 per day and non-self-pay patients (G) who are the responsibility of insurance companies and government agencies and who pay an average of Rs. 16,000 per day. 20% of the total patients fall under the category of Self-pay.

Suppose that Generous Health care achieves 225,000 patient-days but that 25% of the patient days were self-pay (instead of 20%). Compute the net income and the break-even point.

A	Rs.450 million, 54,000 patient days
B	Rs.675 million, 225,000 patient days
C	Rs.45 million, 162,000 patient days
D	Rs.855 million, 235,000 patient days

Reference : Multi-Product Breakeven Analysis- Breakeven point for multiple products

11. Bell Limited is considering the discontinuance of South Division. The following information is as under:

	Divisions (Rs. '000')		**Total (Rs. '000')**
	East and West	**South**	
Sales (Maximum achievable)	6,210,000	776,250	6,986,250
Variable cost	(3,105,000)	(414,000)	(3,519,000)
Contribution	3,105,000	362,250	3,467,250
Specific avoidable fixed cost	(2,173,500)	(621,000)	(2,794,500)
Divisional Income	931,500	(258,750)	672,750

Additional Information:

- The rate of variable costs are 80% of the normal rates due to the current volume of operation. There is adequate market demand.
- For any lower volume of operation, the rates would go back to the normal rates.
- Facilities released by discontinuing South Division cannot be used for any other purpose.

Determine the (excess)/loss over savings and if South Division should be discontinued for Bell Limited.

A	(Rs. 258.750), Yes
B	Re. 0, The decision is indifferent
C	Rs. 517,500, No
D	Rs. 569,250, No

Reference : Short term decisions- Other short term decisions

12. Moiz Limited produces three products from a single raw material that is limited in supply. Product for the period 7 are as follows:

	Product-R	Product-S	Product-T
Maximum demand (units)	1,000	2,400	2,800
Optimum planned production	720	-	2,800
Unit contribution	Rs. 900	Rs. 960	Rs. 590
Raw Material cost per unit (Rs. 100 per kg)	Rs. 250	Rs. 300	Rs. 150

The planned production optimizes the use of the 6,000 kg of raw material that is available from Moiz Limited normal supplier at the price Rs. 100 per kg. However, a new supplier has been found that is prepared to supply a further 1,000kg of the material.

What is the maximum price that Moiz Limited should be prepared to pay for the additional 1,000 kg of the material?

A	Rs.420,0000
B	Rs.448,000
C	Rs.460,000
D	Rs.493,000

Reference: Pricing Decisions and Pricing Strategies- Demand based pricing

13. Shine Jewellers (SJ) is considering a special order for 15 handmade gold ear rings to be given as gifts to members of a wedding party. The normal selling price of a gold ear ring is Rs.58,492.5 and its unit product cost is Rs.39,600 as shown below:

	Rupees
Materials	21,450
Direct Labour	12,900
Manufacturing Overhead	5,250
Unit product cost	39,600

- Most of the manufacturing overhead is fixed and unaffected by variations in how much jewelry is produced in any given period. However, Rs. 1,050 of the overhead is variable with respect to the number of ear rings produced.
- The customer who is interested in the special ear ring order would like special filigree applied to the ear rings. This filigree would require additional materials costing Rs.900 per ear ring and would also require acquisition of a special tool costing Rs. 69,750 that would have no other use since the special order is completed.
- This order would have no effect on the SJ's regular sales and the order could be fulfilled using the company's existing capacity without affecting any other order.

Compute:

Effect if any on net operating income of SJ if the special order is accepted for Rs. 52,492.5 per ear ring. Is the price viable for acceptance?

A	Yes, Rs.200,138
B	Yes, Rs.110,138
C	No, (Rs.767,250)
D	No, (Rs.837,000)

Reference : Short term Decisions- acceptance/ rejection of contracts

14. Delta Limited manufactures four products from different quantities of the same material which is in short supply. The following budgeted data relates to the products:

	Product A1 Rs. Per unit	**Product A2 Rs. Per unit**	**Product A3 Rs. Per unit**	**Product A4 Rs. Per unit**
Selling price	14,000	18,400	22,600	16,600
Materials (Rs.800 per kg)	3,200	4,400	6,800	4,000
Conversion costs	7,800	10,400	11,400	8,600
	11,000	14,800	18,200	12,600
Profit	3,000	3,600	4,400	4,000
Machine time per unit (minutes)	40	40	38	45

The conversion costs include general fixed costs that have been absorbed using a rate of Rs. 4,800 per machine hour

The most profitable use of the raw materials is to make:

A	Product A1
B	Product A2
C	Product A3
D	Product A4

Reference : Short term Decisions- Other short term decisions

15. New Horizon Limited (NHL) is manufacturing and selling 'Juicer cum Grinder and Blender' (JCM) products for many years. NHL is pricing its goods by adding markup of 20% on total cost. However, the current market price of similar product is Rs. 33,000. NHL is losing its share of 'JCM' in market due to competition in domestic market.
The unit cost data of 'JCM' is as under:

	Rs.
Direct material	5,400
Direct labor	13,500
Manufacturing overhead	9,000
Selling and administrative expenses	4,500

If NHL used target costing for item JCM, by how much must costs change if the company desires to meet the market price and maintain its current rate of profit on sales?

A	Rs.5,500		
B	Rs.6,000		
C	Rs.4,900		
D	Rs.6,600		

Reference :Cost Management Techniques- Cost Planning

16. Fukai Communication Limited (FCL) manufactures and sells three models of cell phones viz. 'Budget', 'Super' and 'Economy'. FCL sells seven units of Economy and six units of Super for every five unit of Budget. The variable cost and revenue data for these cell phones are as under:

	Budget	Super	Economy
Selling price (Rs.)	6,000	7,200	3,000
Variable cost per unit (Rs.)	3,600	5,400	2,400

The budgeted sales is expected to be Rs.20 million per month and operating fixed cost is expected to be Rs.2.7 million per month. Due recent recession in economy sales volume is expected to decline to Rs.15 million per month. Management of the company is concerned about their margin of safety.

Assuming that standard product mix will not change, the breakeven sales in units would be:

A	1,700 units	
B	1,800 units	
C	1,500 units	
D	2,000 units	

Reference: Multi-Product Breakeven-Sales/product mix decisions

17. A software manufacturer is experiencing a high level of customer complaints. Customers say that the software products are unreliable and do not meet their needs. The organization has decided to establish a relationship with two major customers (who are both computer manufacturers) to ensure that the software meets their requirements.

Which one of the following statements is correct? The manufacturer

A	is using collaboration as the value driver in its value chain.
B	should focus on products that are popular with its customers.
C	is improving customer value by creating upstream linkages in the value chain.
D	is experiencing internal failures and needs to provide better training to its software developers.

Reference : Externally Oriented Cost Management Techniques-Value Chain

18. Which one of the following statements is not an appropriate description of an organization's value chain?

A	A the primary and support activities from which the organization can derive a competitive advantage
B	an aggregation of independent and strategically relevant activities that collectively contribute to the economic value generated by the organization
C	a set of interrelated activities that provide opportunities for optimizing the collective value derived from the interdependencies
D	a series of linked and strategically relevant activities that deliver products or services that the organization's customers value

Reference : Externally Oriented Cost Management Techniques-Value Chain

19. Which one of the following statements best describes the purpose of product life cycle analysis?

A	to increase the probability that new products will become 'stars'
B	to determine the market share and growth potential of an organization's products
C	to identify and manage the risks associated with an organization's product offerings
D	to understand and plan for the cash flow required by an organization's product offerings

Reference : Cost Management Techniques-Cost Planning

20. Lime Manufacturers Limited (LML) is considering whether to implement target costing, activity-based costing, kaizen costing, customer-profitability analysis, and business-process management and continuous-improvement systems. Management at LML should be aware that these concepts generally go together in pairs.

The two pairs that would most likely go together would be:

	Pair 1	Pair 2
I	business-process management and kaizen costing	continuous-improvement programs and target costing
II	business-process management and target costing	continuous-improvement programs and kaizen costing
III	customer-profitability analysis and kaizen costing	continuous-improvement programs and target costing
IV	business-process management and kaizen costing	customer-profitability analysis and activity-based costing

Select the right pairs.

A	I
B	II
C	III
D	IV

Reference : Cost Management Techniques-Business Process Re-engineering

21. Identify the most accurate statements from the following about the undertaking of customer-profitability analysis.

A	The best measure of customer profitability is customer revenue less the activity-based manufacturing cost of the products purchased.
B	Using activity-based costing to allocate marketing and sales administration costs to customers will provide a useful measure of customer profitability.
C	Despite activity-based costing being used, the allocation of customer-related costs to each individual customer as the final cost object is still problematic.
D	Customer-profitability analysis based on gross margins provides the basis for the development and implementation of strategies tailored to improving the profitability of individual customers.

Reference : Cost Management Techniques-Traditional vs Modern Manufacturing Philosophy

22. HJH Limited is experiencing significant external failure costs. The management accountant uses a quality cost framework to analyze the situation.
Which one of the following strategies would lead to the greatest likely reduction in overall quality costs?

A	increased spending on appraisal costs and decreased spending on external failure costs
B	decreased spending on appraisal costs and increased spending on internal failure costs
C	increased spending on prevention costs and decreased spending on external failure costs
D	increased spending on internal failure costs and decreased spending on external failure costs

Reference: Cost Management Techniques—Total Quality Management

23. As part of an activity-based management project, an organization is analyzing its activities to identify those that can be classified as non-value adding. The organization intends to eliminate these activities from its value chain, and so improve overall stakeholder value. One activity that has been identified as non-value adding is ‘reconciliation’. This is a costly accounting control. It provides no value to any external stakeholder, and the CFO, who has been carrying out reconciliations of the accounts for three years, has never discovered any problems.
Should this activity be eliminated?

A	Yes, because its elimination will decrease costs.
B	Yes, because it provides no value to stakeholders.
C	No, because it contributes to sound business practice.
D	No, because accounting controls are required by regulation.

Reference: Cost Management Techniques-Traditional vs Modern Manufacturing Philosophy

24. Lucas Pvt. Limited (LPL) has recently developed a new product 'Beta'. The workflow of LGL is repetitive in nature. Therefore, applicability of the same learning effect i.e. of 85% is obvious for product 'Beta' being developed. The time taken for the first unit was 25 minutes.

Assuming that an 85% learning effect applies, the time to be taken for the fifth unit is:

A	3.37 minutes
B	13.05 minutes
C	3.85 minutes
D	7.22 minutes

Reference: Cost Management Techniques-Cost Planning

25. THM Limited manufactures of children's goods is considering introducing a new product, the 'Electric Car'. The new product is structurally identical to existing products, but it is made from premium quality materials and has a distinctive and high-quality appearance.

Market research indicates that the product can be sold for Rs.37,500. The company budgets for a 55 % profit margin. Materials are expected to be 80% of total cost. A supplier has offered to provide the materials for Rs.16,500.

What price reduction must be negotiated to meet the target cost?

A	Rs.375
B	Rs.3,000
C	Rs.4,125
D	Cost reduction is not required

Reference :Cost Management Techniques-Cost Planning

PART-B – STRATEGIC FINANCIAL MANAGEMENT

1. Dawar Limited wants to forecast its free cash flow for the next three years. Current free cash flow along with expected annual increase in various items is as follows:

	Expected annual increase	Rs. million
EBIT	5.5%	2,250
Tax	-	652.5
Depreciation	5.0%	382.5
Capital expenditure	3.5%	675
Working capital requirements	4.0%	270

The applicable tax rate for the company is 29%.

By what percentage will free cash flow have increased between now and the end of year-3?

A	20.77%
B	40.11%
C	15.05%
D	22.37%

Reference: Capital Investment Appraisal-Stakeholders and maximizing shareholders wealth

2. Gwadar Home Products Limited is evaluating following three investment proposals. If only the project in question is undertaken, the expected present values and the amounts of investment required are:

Rs. '000'

Project	Investment	Expected PV
1	200,000	290,000
2	115,000	185,000
3	270,000	400,000

If projects 1 and 2 are jointly undertaken, there will be no economies; the investments required and present values will simply be the sum of the parts.

With projects 1 and 3, economies are possible in investment because one of the machines acquired can be used in both production processes. The total investment required for projects 1 and 3 combined is Rs.440,000.

If projects 2 and 3 are undertaken, there are economies to be achieved in marketing and producing the products but not in investment. The expected present value of future cash flows for projects 2 and 3 is Rs.620,000.

Which of the following project/ combination of projects is with highest NPV?

A	Project 1 and 2
B	Project 1 and 3
C	Project 2 and 3
D	Project 3

Reference: Capital Investment Appraisal-Investment Appraisal Methods

3. Global Textile Limited and National Textile Limited are considering the merger in a new company, Silver Textile Limited that will increase the earnings by 20% due to synergy effect. Following information relates to the companies before merger:

		Rs. in million
	GTL	**NTL**
Equity and liabilities		
Share capital (Rs. 10 each)	600	600
Retained earnings	300	80
Total equity	900	680
Debt	1,100	500
	2,000	1,180
Earnings (net profits after tax)	250	200

The financial advisor of the firm has projected the growth in corporate earnings by 20%, if the economic growth is slow and 50%, if the growth is high (applicable for both the companies). Probability of high growth and slow growth are 0.20 and 0.70 respectively. P/E multiple of textile composite sector is 9 and is projected to grow at 10 and 11 for slow and high growths, respectively while weaving sector companies will remain trading at P/E multiple of 6 in any case. After the merger, the new company will be listed in textile composite sector and will be valued accordingly.

Considering the above facts, expected value of National Textile Limited is ____________.

A	16.80
B	14.53
C	24.80
D	13.75

Reference: Capital Investment Appraisal-Stakeholders and maximizing shareholders wealth

4. Saad Limited is contemplating to make a bid to take over Khan Textile Limited. Both companies are in the same industry having similar gearing levels of 18%. WACC of Saad Limited is 19%. Saad Limited has estimated that the takeover will increase its annual cash flows over the next few years by the following amounts:

		Rs. in million
year		After-tax (but before interest) cash flows
2021		15.60
2022		18.30
2023		23.70
2024	onward	29.10

Khan Textile Limited has 8% irredeemable debentures of Rs.31.5 million trading at par.

If Saad Limited makes a bid of Rs. 97 million for the entire share capital of Khan Textile Limited, it would increase shareholders' wealth by ___________________.

Hint: *Use the FCFs of the target company (i.e., cash flows before interest)*

Year	0	1	2	3	4
PV factor at 19%	1	0.840	0.706	0.593	0.499

A	Rs. 2.65 million
B	Rs. 2.71 million
C	Rs. 2.22 million
D	Rs. 2.48 million

Reference: Capital Investment Appraisal-Stakeholders and maximizing shareholders wealth

5. Shariq Industries Limited desires to acquire 100% shares in Kamaal Limited. Both companies operate in the same industry and have similar gearing levels of 17%. Cost of equity of Shariq Industries Limited is 21%. Shariq Industries Limited has estimated that the takeover will increase its annual cash flows over the next few years by the following amounts:

Rs. in million

year	After-tax (but before interest) cash flows
2021	29.40
2022	37.20
2023	40.80
2024 onward	60.70

Kamaal Limited has 8% irredeemable debentures of Rs.77 million trading at par. Tax rate is 29%.

If Shariq Industries Limited makes a bid of Rs. 195 million for the entire share capital of Kamaal Limited, it would increase the shareholders' wealth by________________.

[Hint: Use free cash flow to equity (FCFE) of the target company (i.e., cash flows after interest)]

year	0	1	2	3	4
Discount factor at 21%	1	0.826	0.683	0.564	0.467

A	Rs. 22.44 million
B	Rs. 21.81 million
C	Rs. 19.61 million
D	Rs. 20.07 million

Reference: Capital Investment Appraisal-Stakeholders and maximizing shareholders wealth

6. The conversion option on an 8% convertible bond expires in 3 years' time; if unconverted it is redeemable at par in 10 years' time; conversion is for 20 ordinary shares, the current share price being 370 paisa. The current required return on unconvertible bonds with a 10 year maturity is 12%.

The conversion value of its security is ________.

A	Rs. 68.8
B	Rs. 70
C	Rs. 77.4
D	Rs. 74

Reference: Cost of Capital-Investment decisions, Financing and the cost of capital

7. At January 01, 2019, Noble Cables Limited had issued 6 years term finance certificates (TFCs) for financing another project that has increased the existing balance of Rs. 52 Million to 90 Million. The coupon rate of TFCs is 11% payable annually and the expected IRR is 15%. The prevailing commercial rate for similar risk bonds is KIBOR plus 3%. As per accounting policy undertaken by the company, the TFCs to be amortized at cost. KIBOR is 13% currently equivalent to risk free rate. Determine the market price of TFC (ex-interest) as at December 31, 2019

A	Rs.135.1
B	Rs.100.0
C	Rs.100.34
D	Rs.111.34

Reference :Cost of Capital- Investment decisions, Financing and the cost of capital

8. Zone Limited is all equity financed with Rs.100 million issued shares, the current share price being Rs.2.8. It is considering a major expansion which will require Rs.60 million of new finance and it has been decided to use a 1 for 4 rights issue to raise the money. The net present value of the expansion is Rs.10 million, this is not reflected in the above price but will become known before the shares commence trading ex-rights.

If an investor A is holding 100,000 shares in Zone Limited, how many rights should be sold in order that the investor does not have to spend or take receipt of any cash because of the rights issue?

A	21,429 shares
B	25,000 shares
C	342,857 shares
D	400,000 shares

Reference :Cost of Capital- Investment decisions, Financing and the cost of capital

9. Which of the following firms would most appropriately be valued using an asset-based model?

I. An energy exploration firm in financial distress that owns drilling rights for offshore areas.
II. A paper firm located in a country that is experiencing high inflation.
III. A software firm that invests heavily in research and development and frequently introduces new products.

A	I only
B	II only
C	III only
D	All of these

Reference: Capital Investment Appraisal- Stakeholders and maximizing shareholders wealth

10. Suppose an analyst estimates equity value by discounting free cash flow to equity (FCFE) at the weighted average cost of capital (WACC) in the FCFE model and estimates firm and equity value by discounting free cash flow to the firm (FCFF) at the required return on equity in the FCFF model. The analyst would most likely:

A	Overestimate equity value with the FCFE model and underestimate firm value and equity value with the FCFF model.
B	Underestimate equity value with the FCFE model and overestimate firm value and equity value with the FCFF model.
C	Underestimate equity value with the FCFE model and underestimate firm value and equity value with the FCFF model.
D	Overestimate equity value with the FCFE model and overestimate firm value and equity value with the FCFF model.

Reference: Capital Investment Appraisal- Stakeholders and maximizing shareholders wealth

11. Mr. Khan owns 1% of the equity of Stark Limited, an ungeared company. A friend Mr. Hamad recommends Mr. Khan to switch his funds to similar but geared company Jamal Limited. In order to maintain the risk associated with each investment, it is suggested that Mr. Khan buys 1% of the equity of Jamal limited and invest his remaining funds in Jamal's bonds. The companies incomes an capital structures are show below:

	Jamal Limited	**Stark Limited**
	Rs.	**Rs.**
Rs. 10 Ordinary shares: nominal value	3,000,000	4,500,000
: market value	1,875,000	3,750,000
5% Bonds : nominal value	1,500,000	-
: market value	1,500,000	-
Profits before bond interest	375,000	375,000
Bond interest	75,000	-
Annual dividend	300,000	375,000

Calculate the price of Jamal Limited's equity at which it would no longer pay Mr. Khan to switch funds, assuming that other factors remain constant.

A	Rs.33,750,000
B	Rs.2,250,000
C	Rs.3,675,000
D	Rs.3,000,000

Reference :Cost of Capital- Arbitrage Pricing Theory (APT)

12. An investor purchased a 7 percent coupon bond at par for Rs.1,000 immediately after the payment of a coupon and held it for 18 months. Coupons were received semi- annually and reinvested at the stated annual rate of 4 percent compounded semi- annually. The bond price when sold was Rs.950.41. Which of the following is closest to the value of the reinvested coupons from the bond in the investor's portfolio?

A	Rs.70.7
B	Rs.107.11
C	Rs.71.41
D	Rs.156.6

Reference : Cost of Capital- Debt Financing

PART-C – STRATEGIC MANAGEMENT

1. A company that manufactures ready-made garments produces two lines of clothing: winter and summer. The clothing is produced to a high standard of design and manufacture and it is sold under a widely recognized and prestigious label.
The strategy that the company is seeking to use in the highly competitive clothing market is referred to as a:

A	Cost-focus strategy.
B	Cost leadership strategy.
C	Differentiation strategy.
D	Differentiation-focus strategy.

Reference : Strategic Decision Making- Other aspects of business strategy

2. In comparison to the formal planning approach to strategy development, the emergent approach is not associated with which of the following?

A	Visionary entrepreneurs
B	A response to unexpected contingences
C	Goal congruence
D	Strategy can be tried and developed as it is implemented

Reference : Strategic Decision Making- Strategic Planning

3. Which one of the following best describes that part of the strategic management process within an organization that examines its competitive position in relation to products, production facilities, non-current assets, people, organizational structures and current operating results?

A	Internal Analysis
B	External Analysis
C	SWOT Analysis
D	Stakeholder Analysis

Reference : Strategic Decision Analysis- Organization to its environment

4. The _______________ is a comprehensive approach to strategy that suggests a logical sequence that involves analyses of current situation, generating choices and implementing the chosen strategy.

A	Freewheeling opportunism
B	Incrementalism
C	Rational model
D	Emergent strategies

Reference: Strategic Decision Making- Strategic Planning

5. In an organization, growth continues in an environment of more formal communications, budgets and focus on separate activities like marketing and production. Incentive schemes replace stock as a financial reward. However, there comes a point when the products and processes become so numerous that there are not enough hours in the day for one person to manage them all, and he or she can't possibly know as much about all these products or services as those lower down the hierarchy.

According to Grenier organizational growth model, which of the following crises does this phase ends with?

A	Crises of control
B	Crises of red tape
C	Crises of Autonomy
D	Crises of ?

Reference: Directions and method of growth

6. Which one of the following activities would be part of the performance element of corporate governance?

A	Responding to changes in the business environment
B	Monitoring the internal control system
C	Establishing an audit committee
D	Designing and implementing a corporate code of conduct

Reference : Strategic planning- other aspects of business strategy

7. ___________________ decisions commit an organization to specific products, markets, resources, and technologies over extended period of time.

A	Strategic planning
B	Strategic formulation
C	Strategic evaluation
D	Strategic implementation

Reference : Strategic Decision Making- Strategic planning

8. An organization needs __________________ about its environment to allow it to anticipate changes and to design strategies that will allow it to respond effectively to those changes.

A	Strategic planning
B	Scenario planning
C	Rational planning
D	Strategic intelligence

Reference :Strategic Decision Analysis- Strategic Intelligence

9. The demand conditions in the home market are important for which of the following reasons?

A	If the demand is limited it enables the firm to obtain the economies of scale and experience effects it will need to compete globally.
B	The experience the firm gets from supplying foreign consumers will give it an information advantage in global markets
C	If the maturity stage of the public limited company is reached quickly, this will give the firm the incentive to enter export markets before others do.
D	All of these

Reference :Strategic Decision Making- Other aspects of business strategy

10. Identify the key tools that can are appropriate in position auditing and situation analysis stage of strategic planning.

A	Distinctive competences
B	PEST Analysis
C	Scenario planning
D	Stakeholder analysis

Reference :Strategic Decision Planning- Strategic Planning

11. According to Gouillart and Kelly, a transformation process must create a new corporate vision and opportunities for an organization and introduce new ways of doing things. Identify the concept introduced by them for defining this process.

A	Three-stage model
B	Cultural web
C	Gemini 4Rs framework
D	Ice-cube model

Reference :Change Management- Models of managing change

12. ________________strategic planning approach(es) focuses on organization's core competencies and capabilities.

A	Resource-based
B	Accounting-led
C	Position-based
D	All of the above

Reference :Strategic Decision Planning- Strategic Planning

13. The type of strategic planning approach and decision making that highlights small and slow change rather than one-off changes in direction, is defined as _____________.

A	rational approach
B	freewheeling opportunism
C	incrementalism
D	emergent strategy

Reference :Strategic Decision Planning- Strategic Planning

DESCRIPTIVE QUESTIONS

Question-1

Beatle Limited (BL) has dedicated production facilities for a component 'X' and has adopted just-in-time (JIT) system, for inventory management, and the total quality management (TQM) philosophy for continuous improvement in customer satisfaction.

At the beginning of the Period-1, the planned information, relating to the production of component 'X' through the dedicated facilities, is as follows:

	Rs. per unit
Input materials:	
– Material-A (2 units at Rs.3,600)	7,200
– Material-B (3 units at Rs.1,800)	5,400
Variable cost	3,000
Total Fixed costs (Rupees)	34,200,000

Additional Information:

- It is anticipated that 10% of the units of component 'X', during work-in-process (WIP), will be found defective and to be scrapped.
- The faulty units delivered to the customers will require free replacement at the rate of 2% of the quantity invoiced to them in fulfilment of orders.
- Consequently, all losses will be treated as abnormal in recognition of a zero defect policy and will be valued at variable cost of production.
- No changes have occurred from the planned price levels for materials, variable overhead or fixed overhead costs.
- Actual statistics for each period (1, 2 and 3) of component 'X' are:

Periods	**1**	**2**	**3**
Quantity invoiced to customers (Units)	5,400	5,500	5,450
Work in Process (Units)	6,120	6,200	5,780
Total costs:			
– Materials A and B (Rupees)	88,128,000	89,280,000	83,232,000
– Variable cost of production (Rupees)	18,360,000	18,600,000	17,340,000
Total fixed cost (Rupees)	32,400,000	35,400,000	37,000,000

Required:

(a) Prepare an analysis of the relevant figures, provided in the statistical data of component 'X', to show that the Period-1 actual results have been achieved at the planned level in respect of quantities and losses and unit cost levels of materials and variable costs. **(25 Marks)**

(b) Using above analysis, calculate the value of planned level of each of the internal and external failure costs for Period-1. **(25 Marks)**

(c) BL authorized following additional expenditures during the periods 2 and 3:

Rs. in million

Periods	**2**	**3**
Equipment accuracy checks	2.0	2.0
Staff training	1.0	1.0
Inspection costs	–	1.0
Extra planned maintenance of equipment	–	1.5
	3.0	5.5

In addition to above statistical data for Period-3, the actual free replacements of component 'X' to various customers were 170 units and 40 units in periods 2 and 3 respectively.

Prepare an analysis for each period (2 and 3) which should reconcile and/ or reflect the following: **(50 Marks)**

(i) Number of components invoiced to the customers with those worked-on in the production process.

(ii) Changes from the planned quantity of process losses and changes from the planned quantity of replacement of faulty components to the customers.

(iii) Cost analysis for periods 2 and 3, showing the actual internal failure costs, external failure costs, appraisal costs and prevention costs.

(iv) Summarized results, in the form of a report explaining the meanings and inter-relationship of the statistical and analytical data. The report should include relevant examples of each cost type, commenting on the uses in the monitoring and progressing of the TQM policy being pursued by BL.

Reference: Cost Management Techniques- Total Quality Management

Question-2

New Horizon Limited (NHL) is manufacturing and selling of a single product ‘Tetra’ currently having an order for 6,000 product units per period to be fulfilled by the company. There are no stocks of product units at the beginning or end of the period under review. The stock level of material R remains unchanged throughout the period. The unit specifications are as follows:-

Direct Materials R	9 Sq. meter at Rs. 55 per square meter
Machine Time	0.8 Running hours
Machine cost per gross hour	Rs. 400
Selling price	Rs. 2,500

NHL is planning to implement a Quality Management Programme (QMP) the following additional information regarding costs and revenues are given as of now and after implementation of Quality Management Programme.

Before the implementation of QMP	**After the implementation**
1: 7% of incoming material from suppliers scrapped due to poor receipt and storage organization	**1:** Reduced to 5%.
2: 5% of materials R input to the machine process is wasted due to processing problems.	**2:** Reduced to 3.5%
3: Inspection and Storage of Material R costs Rs. 2 per square meter purchased.	**3** No change in the unit rate.
4: Inspection during the production cycle, calibration checks on inspection equipment vendor rating and other checks cost Rs. 250,000 per period.	**4** Reduction of 40% of the existing cost.
5 Production Qty. is increased to allow for the downgrading of 15.5% of the production units at the final inspection stage. Downgraded units are sold as seconds at a discount of 40% of the standard selling price.	**5** Reduction to 10.5%
6: Production Quantity is increased to allow for return from customers (these are replaced free of charge) due to specification failure and account for 7% of units actually delivered to customer. Replacement units incur a delivery cost of Rs. 250 per unit. 70% of the returns from the customers are rectified using 0.3 hours of machine running time per unit and are re-sold as ‘third quality’ products at a discount of 50% on the standard selling price. The remaining return units are sold as scrap for Rs. 125 per unit	**6** Reduction to 3.5%
7: Product liability and other claims by customers is estimated at 4% of sales revenue from standard product sale.	**7**: Reduction to 2%
8: Machine idle time is 30% of Gross machine hrs. used (i.e. running hour = 70% of gross/ hrs.)	**8:** Reduction to 12.5%
9: Sundry costs of Administration, Selling and Distribution total- Rs. 6,00,000 per period.	**9:** Reduction by 20% of the existing.
10: Prevention programme costs Rs. 2,00,000	**10:** Increase to Rs. 6,00,000

The Total Quality Management Programme will have a reduction in Machine Run Time required per product unit to 0.7 hr.

Required:

a) Prepare summaries showing the calculation of (i) Total production units (pre inspection), (ii) Purchase of Materials R (Square meters), (iii) Gross machine Hours. In each case, the figures are required for the situation both before and after the implementation of the Quality Management Programme so that orders for 6,000 products can be fulfilled. **(50 Marks)**

b) Prepare Profit and Loss Account for NH for the period showing the profit earned both before and after the implementation of the total Quality programme. **(50 Marks)**

Reference: Cost Management Techniques- Total Quality Management

Question-3

Zest Limited (ZL) is a pioneer in innovative lighting solution in Pakistan. The company has a state-of-the-art manufacturing facility in Karachi in which all variants and designs of lighting are produced. The company offers distinct products which are distributed all over Pakistan, which include Tube Lights, Energy Savers, Halogen Lamps, Solar Bulbs and LED Lights.

Following budgeted statement of profit or loss for the year 2020 based on absorption costing was prepared by the controller of accounts, of the company:

		Rs. '000'
Sales revenue		60,000
Cost of goods sold:		
Materials	25,000	
Labour	15,000	
Manufacturing expenses	7,500	
Selling and administrative expenses	5,000	(52,500)
Net income		7,500

Mr. Masood has recently taken charge as president of Zest Limited (ZL). While going through the above statement of profit or loss, he showed his dissatisfaction. According to him it does not reflect product-wise performance and profitability that might help in making strategic business decisions. You have lately joined Zest Limited (ZL) as Management Accountant and heading the cost department of the company. President called a management meeting of all operating managers including Marketing, Production, Procurement, Human Resource, Finance and Cost Departments to discuss different options available to the company that are to be considered for preparation of budget for the year 2020. Manager marketing was interested in knowing the amount of sale he can make of each of the products and the order of sale preference to maximize contribution as percentage of sales. President asked you to provide figure of product-wise breakeven sale as well as product-wise contribution margin ratio to manager marketing. You pointed out that this exercise will require a product-wise sales mix ratio from marketing department and breakup of mixed costs into fixed and variable costs. President asked marketing manager to provide a product sales mix ratio and you asked your Assistant Cost Accountant for a breakup of all costs into variable and fixed elements by applying statistical techniques.

Assistant Cost Accountant calculated the percentages of variable elements in the total mixed costs shown in the above statement of profit or loss:

	Percentage (%)
Materials	90
Labour	80
Manufacturing expenses	60
Selling and administrative expenses	70

President is interested to know the revised sales mix to maximize the contribution margin, if the product-wise sales may increase or decrease by 10%, while total amount of sales remains the same. Human resource manager and production manager pointed out that a new competitor has entered into the market who is attracting Glow Company's labor force and there is a chance that Glow Company might lose 10% of its labor force in the budget year 2020. Manager marketing pointed out that in this labour constraint situation, products sales mix might vary upto 20%.

Manager marketing provided product wise sales mix ratio of total budgeted sales as follows:

Product	**Percentage (%)**
Tube lights	30
Energy savers	15
Halogen lamps	7
Solar bulbs	28
LED lights	20
Total	100

President asked you to calculate an appropriate product sales mix to maximize contribution, considering the labour constraint, to assist manager marketing to formulate a proper marketing strategy. Manager marketing informed that there is an enquiry from an overseas customer for an order of Rs.1.5 million for each of Tube Lights, Halogen Lamps, and LED lights. The agent is asking for a commission that is yet to be worked out. President decided that the company should earn 20% contribution on this order. He asked you to calculate amount of commission payable to the agent as a percentage of sale.

Cost Department also prepared the following statement showing apportionment of variable costs elements in terms of percentage of the total variable costs for the five products to be manufactured:

Costs Percentages (%)

	Tube Lights	**Energy Savers**	**Halogen Lamps**	**Solar Bulbs**	**LED Lights**	**Total**
Materials	40	20	10	20	10	100
Labour	15	25	10	25	25	100
Manufacturing expenses	30	10	10	30	20	100
Selling and administrative expenses	10	30	20	30	10	100

Required:

Provide following information to assist management to make strategic business decisions in the year 2020:

(a) Prepare budgeted statement of profit or loss based on direct costing. **(12 Marks)**

(b) Calculate product-wise contribution margin ratio and explain the factors to be considered for the products having a zero or negative contribution. **(28 Marks)**

(c) Calculate product-wise breakeven sales level. **(17 Marks)**

(d) Determine the order of sale preferences to maximize contribution as a percentage of Sales. **(05 Marks)**

(e) Prepare a revised sales mix of Rs.60 million to maximize contribution, assuming that product-wise budgeted sales may vary by 10% (up or down). **(12 Marks)**

(f) Assume that Zest Limited (ZL) cannot drop any of the above products as customers buy in mix. Calculate maximum contribution Glow Company can achieve if labour availability reduces by 10% and product mix may vary by upto 20% force. **(18 Marks)**

(g) Calculate percentage of commission that can be offered to the agent Rs.1.5 million each for Tube lights, Halogen lamps and LED lights on export order of as pointed out by Manager marketing, to earn 20% contribution on total sales value. **(08 Marks)**

Reference: Multi-Product Breakeven Analysis- Breakeven point for multiple products

Question-4

Phantom Automobile Group (PAG) is a leading player in the automotive industry comprising Phantom Automobile Limited (PAL) and its two subsidiaries. The group is competing with more than fifteen competitors in a highly competitive environment. PAL was established in 2012 through a management buy-out (MBO) from a listed company Albert Engineering Limited (AEL) and is managed by four key MBO Team Members.

PAL is situated at a large, relatively under-utilized site. The site was purchased from AEL at the time of MBO. A part of the under-utilized site was sold to a Telecommunication Corporation during the year 2020 which has resulted in a substantial capital gain on sale.

Mr. Sajid Zafar is the Chairman of the group. He and his family own 65% of the 1,000,000 ordinary shares of Rs.10 each in PAL.

Since MBO, the group has witnessed a drastic increase in the annual revenue.

You, are an Audit Manager of Spencer Consultancy Firm (SCF) and have recently conducted the audit of PAL for the year ended June 30, 2020.

You have received the following memorandum from the Audit Partner of SCF.

Memorandum:

Mr. Sajid Zafar wants to realize his investment in PAL, so that he may opt for another investment opportunity. At the moment, he is indecisive about whether to retain control of the business or deviate from the prospective opportunity.

The following are the issues that Mr. Sajid is confronting:

- He is keen to know the worth of his holding in the PAL and the suitable method for realizing his investment.
- Since 2012, the staff has grown substantially and remained highly motivated in the business. However, he is concerned about the problems that might develop if new owner(s) acquire the majority shareholdings.

To keep his management personnel contented, Mr Sajid is willing to introduce a share option scheme as a part of the remuneration package for the staff to incentivize them.

Furthermore, with his decision to realize the investment, he is anxious about the issue of sustainability that needs to be prioritized at PAL. He believes that the other three shareholders are not concerned about it and think that the success of PAL should only be judged on financial aspects.

Required:

Prepare a report for the audit partner, addressing all the areas of concern of Mr Sajid and deliberating the following:

(a) The options available to Mr Sajid for realizing his investment. **(25 Marks)**

(b) Using the information as appended in **Annexure-1**, estimate the value of Mr. Sajid's holding, using three different valuation methods. You may ignore the tax issues that might arise if Mr Sajid realizes his investment. **(25 Marks)**

(c) Identify the problems which might arise if new owners acquire a majority shareholding in the group and using the information from the newspaper articles (as available in **Annexure-2**) and explain the importance of sustainability to Phantom Automobile Limited (PAL). **(50 Marks)**

ANNEXURE-1

Phantom Automobile Group
Information Pack – for the year ended June 30, 2020

1) History

The group was the subject of a management buy-out from Albert Engineering Limited (AEL), in 2012 and continues to be owned and managed by a buy-out team. The shareholding ownership structure is as follows:

Name	Shareholding
• Mr. Sajid Zafar and Family	65%
• Mr. Ghazanfar Khan	12%
• Mr. Luqman Baig	12%
• Mr. Azeez Kamal	11%

2) Possible flotation

The possibility of PAL for floating shares is presently under review. The share flotation will enable the shareholder directors to realize some of their investment in PAL and provide access to capital markets.

3) Competitors

The group is diverse in activity; the companies that most closely resemble PAL are Faisal Engineering Limited (FEL) and Crest Allied Limited (CAL).

4) Management

The subsidiaries of PAL are managed at an operational level by three of the shareholder directors.
The fourth, and majority, shareholder director is the group's Chairman who provides strategic direction to the group.

5) Capital expenditure

PAL recognizes the need to replace existing plants over the next few years due to normal wear and tear and also the need to maintain its competitive advantage by applying the latest technology.

6) Summary trading results

The impact of investment and the benefit of productivity improvements have resulted in a reduction in employee numbers while continuing to increase output. Sales, profit and staff number growth have been as follows:

Rs. in million

Years	2015	2016	2017	2018	2019	2020
Sales	68,400	70,376	75,810	79,068	83,482	83,594
Cost of sales	48,358	50,248	53,370	53,054	53,516	53,542
Gross profit	20,042	20,128	22,440	26,014	29,966	30,052
Operating costs	13,092	12,942	14,738	17,098	21,378	21,442
Operating profit	6,950	7,186	7,702	8,916	8,588	8,610
Profit on disposal of property	–	–	–	–	–	26,768
Profit before interest	6,950	7,186	7,702	8,916	8,588	8,610
Interest	(1,700)	(1,300)	(1,920)	(1,960)	(1,240)	1,198
Profit before tax	5,250	5,886	5,782	6,956	7,348	9,808
Tax	(1,523)	(1,707)	(1,677)	(2,017)	(2,131)	(2,844)
Profit after tax	3,728	4,179	4,105	4,939	5,217	6,964
Dividends	1,640	1,700	1,776	1,844	1,920	2,000
Staff numbers	522	515	511	502	494	490
Gross profit margin	29.3%	28.6%	29.6%	32.9%	35.9%	35.9%

Following the property disposal in this most recent year, PAL has Rs.35,200 million of cash on its statement of financial position.

7) Forecast figures 2021 – 2025

- Sales and gross profits to rise by 10% each year.
- Other operating costs excluding depreciation to rise by 3% per annum.
- Depreciation for the year 2021 to remain at the 2020 figure of Rs. 4,000 Million; the only change in the period 2021-2025 is a rise to Rs. 5,200 million from the year 2024 due to the acquisition of new assets.
- Significant expenditure of Rs. 12,000 million on non-current assets in the year 2024. Other non-current asset acquisitions and disposals to cancel out each year.
- The interest for 2021-2025 will remain at 2020 level.
- Working capital levels to increase at the start of each year to be 10% of that year's predicted sales.
- Tax to be charged at 29% of taxable profits over 2021-2025. Depreciation is fully tax allowable against profits.

8) Sector and company information

The current risk-free interest rate is 7%. The following company and sector information are provided.

	Company	Sector
P/E ratio	18.46	14.43
Beta	1.00	0.65
Expected return	10.00%	N/A

ANNEXURE-2

Extracts from press articles about sustainable automobile production

'The increased awareness and sheer interest in economic and environmental concerns of stakeholders at this point of time has led manufacturers to develop consistently environmental friendly automobiles and related products that contribute to a better environment.'

‘Building a more environmentally friendly business for the future'.

Crest Allied Limited (CAL) has recently launched new design and battery concepts which includes, fuel cells that will have a clear advantage over these older technologies in having lower carbon dioxide (a greenhouse gas) emissions. The company is keen to contribute to ensure sustainable development in reducing its environmental footprint. Another key player in the engineering company, Faisal Engineering Limited (FEL) that has introduced a new design hydrogen powered vehicles. It will significantly reduce the company's carbon footprint, as well as saving costs on raw materials.'

'Consumers are demanding more renewable materials and environmental labelling on the products they buy. Many rate hydrogen automobiles as the most eco-friendly type and 38% of consumers said they regularly search for environmental labels and logos on vehicles manufacturing.'

'According to CAL's CEO, 'the findings [of a survey] reinforce the importance of putting environmental issues at the heart of the company's agenda… We have no illusions about the challenges we face, but by finding new ways to eco-friendly vehicles, we will make a difference for the future.'

Reference: SFM [Capital Investment Appraisal- Stakeholders and maximizing shareholders wealth]/ SM [Strategic Decision Making- Organization to its environment]

Question-5

Chamber Sanitary Limited (CSL) is a multinational company primarily engaged in the manufacturing of of wide range of sanitary products for both national and international market. The higher management of the company is considering to setup a manufacturing unit of product 'R' in UAE. The life cycle of Product 'R' is almost complete but production for further 2 years is under review, which is expected to produce a net cash inflow of Rs. 600 Million next year and Rs. 460 Million in the last year of Product 'R' life.

Product 'F':
CSL has already decided to replace Product 'R' with Product 'F' whose production will commence in 2 years' time. Product 'F' is expected to have life cycle of 10 years. It could be either manufactured in factory situated in Karachi or in Faisalabad manufacturing unit owned by the company. The location of factory situated in Karachi is near the market place, therefore, if Product 'F' is manufactured in Faisalabad, the company will have to bear a transportation cost of Rs. 2,000 per unit. Production costs will be the same for both factories. Product 'F' will require additional equipment and workers will need training: this will cost Rs. 1,200 Million at either location. 250,000 units of Product 'F' will be made each year and each unit is expected to generate a net cash inflow of Rs. 5,000 in addition to transportation costs. If Product 'F' is made in Karachi, the factory will be closed and sold at the end of product's life.

Product 'G'
The higher management is considering the further possibility: Product 'G' could be produced in Karachi factory and Product 'F' at Faisalabad unit. Product 'G' must be introduced in 1 year's time and will remain in production for the period of 3 years. If it is introduced, the manufacturing of Product 'R' will have to cease a year earlier than planned. If this happened, output of Product 'R' will be increased by 15% to maximum capacity next year, its last year, to build stock prior to product's withdrawal. The existing staff would be transferred to Product 'G'.

The equipment required to make Product 'G' would cost Rs. 800 Million. 65,000 units of Product 'G' would be made in the first year: afterwards production would rise to 90,000 units a year. Product 'G' is expected to earn net cash inflow of Rs. 14,000 per unit. After 3 years' production of Product 'G', the factory located in Karachi would be discontinued and sold. (Product 'F' would not be transferred back to the factory located in Karachi at that stage; production would continue at Faisalabad unit)

Sale of Factory:
It is expected that the factory in Karachi could be sold for Rs. 1,100 Million at any time between the beginning of Year-2 and the end of Year-12. If the factory is sold, CSL will make redundancy payments of Rs. 400 Million and the sale of equipment will raise Rs. 70 Million.

Equity Beta of CSL is 0.5. The risk-free rate is 8% and the market premium is 9%.
The cost of debt net of tax is 9%.
The capital structure of the CSL is 60% Debt and 40% Equity.

Required:

(a) Evaluate the three options for CSL and determine the best financially viable option for the company. **(30 Marks)**

(b) Calculate and discuss the sensitivity of the option in part **(a)** to: **(20 Marks)**

(i) changes in transportation costs

(ii) changes in the selling price of the factory

Reference: Capital Investment Appraisal- Investment Appraisal/ Risk and uncertainty- Risk Analysis Techniques

Question-6

Delta Electric (DE), a Karachi based electricity company, has historically generated electricity through furnace oil and hydro power. But for the last few years there is a shortage of water in the country, so the company is totally depending upon furnace oil. The prices of oil are increasing day by day, which results in an increase in the prices of electricity. Now from next year i.e., 2021, DE is considering to generate electricity using alternative resources. There are two alternatives available to the company, the natural gas and the coal. Both types of alternatives are expected to generate annual revenues at current prices of Rs.500 million. Plant and machinery will be required at gas power station and coal station worth Rs.300 million and Rs.2,000 million respectively. Costs of plant and machinery will be payable in two equal instalments in Year-1 (2021) and Year-2 (2022). The expected operating life of both types of power station is 30 years. Financial analyst of the company has prepared the following annual running cost estimates of both the alternatives:

Annual Running Costs

		Rs. '000'
	Gas	**Coal**
Gas purchases	200,000	
Coal purchases		10,000
Labour costs	60,000	25,000
Sales and marketing expenses	35,000	35,000
Customer relations	3,000	15,000
Other costs	4,000	20,000

Whichever power station is selected, electricity generation is scheduled to commence in three years' time i.e., beginning of 2024 and existing workers can be transferred to newly selected project. After tax redundancy costs are expected to be Rs.3 million and Rs.30 million in gas and coal projects respectively in year four (2024). Both projects would be financed by the issuance of new bonds. Gas and coal projects would require a bond issue at 9% and 12% per year respectively.

Other information related to these two projects is as under:

	Gas	**Coal**
Risk-free rate of return	5.60%	5.60%
Expected rate of return	15%	15%
Gearing (Debt/ Capital Employed)	30%	40%
Inflation per year	7%	7%
Equity beta	1.20	1.60

The existing power station would need to be demolished at a cost of Rs.7 million after tax in Year-3 (2023). Company uses straight-line method of depreciation but the tax allowable depreciation is at the rate of 10% per year on a straight-line basis. After tax cost of demolishing plant and machinery at the end of their useful lives is Rs.5 million and Rs.500 million for Gas and Coal respectively. Corporate tax rate is 29%.

Required:

(a) In which project (Gas or Coal), Delta Electric should invest, based on net present value? **(40 Marks)**

(b) What real options are significant for power station decision process? Briefly discuss with examples. **(10 Marks)**

Reference: Investment Appraisal Techniques-Investment Appraisal and Methods

Question-7

Spectrum Pakistan is an advisory and business management Consultancy Company, founded 45 years ago by three founders who are now three of the senior partners in the business. These three founding senior partners control all of the operational and strategic decisions in the firm. The company offers a wide range of services including change management, business process innovation and leadership development. It has become very successful due to the growth in the economies and the highly developed financial and business service sectors within Pakistan and its neighboring countries.

Spectrum Pakistan has several clients among the top 100 companies in Pakistan. Spectrum Pakistan employs over 500 staff in its head office in Islamabad. Also located within same city, are several information systems designed consultancies, management and financial training companies and the country's largest Internet Service Provider (ISP), Weber Communications Limited. Spectrum Pakistan has seven other senior partners and 15 associate consultants and 35 administration staff. Many of Spectrum's staff was recruited from Pakistan's top universities, two of which specialize in the teaching and research of management and business skills. However, Spectrum Pakistan has also lost a number of its experienced professionals to rival firms, which have offered better pay and a greater variety of work experience. The number of services provided by Spectrum Pakistan has dropped by 7% each year for the last two years. However, the three founding senior partners are not concerned, as they believe Spectrum Pakistan's reputation will ensure its continued success, and whenever Spectrum Pakistan will advertise for staff, it will receive a large number of applications from highly qualified candidates.

Organizational Culture:

There is a very rigid hierarchy in place within Spectrum Pakistan. The three founding senior partners have expensive company cars, large private offices and other partners and associates within firm cannot contact them without prior arrangement. The other seven senior partners also have large offices and drive expensive company cars. The 15 associates are ranked in terms of length of service, with those who have been with Spectrum Pakistan the longest having superior office facilities and other privileges. Senior partners and associate consultants work on their own clients and there is little collaboration or sharing of knowledge and experience. Additionally, associate consultants must seek a senior partner's authorization for most advisory decisions.

The administrative staff is required to wear a company uniform. Administrative staff is rewarded with an annual pay bonus. This bonus is based upon their commitment and loyalty to Spectrum Pakistan and this is determined by the senior partner to whom the administrative staff member reports. In respect of the bonus, the senior partner will normally take into account sickness days, punctuality and general attitudes to work. Each administrative staff member is set regular performance targets and deadlines by the senior partners and if these are not met then disciplinary action is often taken. Staff turnover of administrative staff in Spectrum is high. Monthly newsletters are sent to all the staff of Spectrum, focusing mainly upon recent and past success stories and re-enforcing Spectrum Pakistan's strong reputation for 'high standards, hard work and loyalty'.

Research and Development:

The other senior partners of Spectrum Pakistan recognize that the company's growth is limited by the size of the local market for its services and are reviewing Spectrum Pakistan's current website. They are proposing to invest in the development of a more sophisticated website in order to pursue further international development of the company through greater use of the Internet.

At present, Spectrum's website merely contains a description of the company, its staff and contact details. The site was originally designed by the staff of Spectrum, when it was first set up and is currently hosted by Weber Communications Limited. The partners hope that by improving Spectrum's website it will allow the company to develop new business in other parts of Asia initially building room for exploiting untapped market as well as creating employment for talented new comers in order to promote collaborative culture within the company, with a view to becoming a global company in the longer-term.
The partners of Spectrum Pakistan are considering developing a new website. This will contain case studies of previous contracts, blogs, video streams and detailed descriptions of key staff and the range of services offered by Spectrum Pakistan. The website will also enable email and messaging facilities between clients, potential clients and Spectrum Pakistan's consultants. The partners of Spectrum are considering using the services of a specialist web design company, Marvel Tech Pvt. Limited, situated in Islamabad to design and develop the new website. The partners of Spectrum Pakistan are also considering the possibility of hosting the website themselves.

At a recent meeting, the three founding senior partners were very reluctant to consider adaptation of new website and working more collaboratively, stating that 'this is not what Spectrum Pakistan does'. However, the seven other senior partners are interested in pursuing a change in the way Spectrum operates but do not feel that they have the necessary experience to manage a change process. The other senior partners stated, if Spectrum does not change its 'top down' culture, then it is likely that the firm will continue to decline and its existence will be threatened.'

Required:

You, being the Business Analyst of Spectrum Pakistan, are required to prepare detailed report to the higher management covering the following:

Question Number 1

Assess the factors which are likely to block cultural change within Spectrum Pakistan. You should use Johnson's 'cultural web' model to assist in this evaluation. **(15 Marks)**

Question Number 2

Discuss, using Porter's Diamond model, whether Spectrum Pakistan might gain a competitive advantage as a result of being based in Pakistan. **(17 Marks)**

Question Number 3

Evaluate the proposal made by Spectrum Pakistan's directors to develop and host a more sophisticated website. **(18 Marks)**

Reference: Change Management- Implementing Change/ Strategic Decision Making- Other aspects of business strategy/ Strategic Decision Making-Directions and method of growth

Question-8

Glasgow Corporation is one of the largest conglomerated public limited company operating in Pakistan for the last 50 years. It was a venture of Dynamic Pvt. Limited which started their business primarily as chemical manufacturing company later acquiring existing chemical distributors and retailers as the result of many successful mergers and acquisitions embarking growth pace of the business. The company was keen to proceed further and not restricted itself in only one industry, thus pulling itself out of its comfort zone and expanding its roots in diversified industries typically including textile, cosmetic, pharmaceuticals and automobile companies. Presently, the company is governed by the pioneers of the business Dynamic Pvt. Limited having 40% shares, while 30% stake was held by financial institutions, 25% by Glasgow employees and remaining 5% with the general public.

Environmental Implications:

It has been more than 5 decades since the establishment of Glasgow Corporation chemical factory which from inception, was surrounded by agricultural land connected with a lake that stretches alongside the factory area ultimately dropping down to the sea. All the chemical untreated waste of the company forms a passage from the vicinity of factory dumping into the lake. Over the years, with increased urbanization need for proper infrastructure and facilities became essential for the locality like residential areas, schools, hospital and market as well as increasing need of operating factory at 100% capacity required employees to be settled near the premises of the factory area along with their families.

The factory is located in the area controlled by the Government and requires renewal of license each year to continue its operations. The present government, discovered about the activities of the companies and hazardous waste that forms the part of lake leading to sea and showed deep concern on the impact this would have on the lives of habitants. Considering the severity of the event, the government decided to penalize the company and withheld its license in order to restrict it from further polluting the environment. As a response during the court trial, the company countered its activity by mentioning it as a core requirement for the operations else whole of the process would become rather uneconomical to the level that it could develop going concern issues for the company.

The court after final hearing, gave verdict of penalizing the company for dumping untreated waste in the lake as it was against the applicable law that is, The Pakistan Environmental Protection Act 1997, and breach of corporate social responsibility and thus, summoned it to ensure adherence to the guidelines to avoid any strict action for the future, however, the court finally directed the government to renew the license of the company allowing it to dump only treated waste in the lake as the licensing includes no restrictions and the activity is critical to the sustenance of the company.

Changing Dynamics of Automobile Industry:

The auto sector continues to flourish as one of the best performing creating avenues for revenues, employment creating room for research and development and innovations for the market players. Despite probability of deceleration in growth, Government's auto policy has been foreseen to uplift industrial progress pulling down the barriers for many new players in the market with entirely new models. Patron Pvt. Limited a subsidiary of Glasgow Corporation is one of the key market players in the industry having considerable market share and huge investment in place which is expected to increase in the coming years. The company is primarily involved in the manufacturing of all scale trucks to facilitate the transportation business. Although trucking industry has been exposed to consistent declination where the work at certain government projects have halted due to imposition of high taxes on non-filers, so are the supplies of trucks and the respective payments, resulting disruption of the work flow and the multiple upward price revisions due to currency depreciation, economic slowdown to curtail domestic demand and price-sensitive potential buyers refrained from making purchases.

Required:

You are CMA corporate consultant having wide range of experience has been appointed as an advisor to provide guidance on plan of action to the management on the following:

Question Number 1

How being a diversified conglomerate could be beneficial for Glasgow Corporation in achieving economies of scale and creating competitive advantage? **(35 Marks)**

Question Number 2

Discuss how crucial is the synchronization and harmony amongst the team members to bring forth synergic affect in the decision making? **(15 Marks)**

Reference: Strategic Decision Analysis- Directions and Methods of Growth/ Change Management- Managing resistance to Change

THE END