# STRATEGIC PERFORMANCE MANAGEMENT AND BUSINESS VALUATION

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

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

## SECTION – A (Compulsory)

**1. (a) Choose the correct option:** **[10 x 2 = 20]**

(i) The following details are given for a company:
Sales - ₹ 1,00,000; Costs - ₹ 75,000; Depreciation - ₹ 20,000; Tax - 35% Change in Net Working Capital - ₹ 1,000; Change in Capital Spending - ₹10,000. Then the Free Cash Flow to Firm (FCFF) will be:
a) ₹3,250
b) ₹6,750
c) ₹10,250
d) ₹12,250

(ii) Burnpur Cements Ltd. earned free cash flow to Equity Shareholders during the Financial Year ending 2016 at ₹4.5 lakhs and its cost of equity is 13% with a projected earnings growth rate of 10%. The market value of debt is ₹50 lakhs. The value of firm as per Constant Growth Valuation Model will be:
a) ₹4,50,000
b) ₹1,45,000
c) ₹1,50,000
d) ₹1,65,000

(iii) X Ltd. has ₹100 crores worth of common equity on its balance sheet comprising of 50 lakhs shares. The company's Market Value Added (MVA) is ₹24 crores. What is company's stock price?
a) ₹230
b) ₹238
c) ₹248
d) ₹264

(iv) P Ltd. intends to acquire R Ltd. (by merger) based on market price of the shares. The following information is available of the two companies.

| | P Ltd. | R Ltd. |
|---|---|---|
| No. of Equity shares | 10,00,000 | 6,00,000 |
| Earning after tax | 50,00,000 | 18,00,000 |
| Market value per share | ₹ 30 | ₹ 25 |

New EPS of R Ltd. after merger will be:
a) ₹4.00
b) ₹4.05
c) ₹4.60
d) ₹4.53

(v) Duration of a bond will __________ when the yield-to-maturity on the bond increases.

a) Decrease
b) Increase
c) Not Change
d) All three above are possible

(vi) The Average Cost of a firm is given by the function Average Cost = x3 + 12x² – 11x, its marginal cost will be:

a) $4x^3 + 36x^2 – 22x$
b) $x^4 + 12x^3 – 11x^2$
c) $x^3 + 12x^2 – 11x$
d) None of the above

(vii) ________give target company bondholders the right to sell their bonds back to the target at a pre-specified redemption price in the event of a takeover.

a) Poison pills
b) Poison puts
c) Share repurchase
d) None of these

(viii) If value of A Ltd. is 50, B Ltd. is 20 and on merger their combined value is 90 and A Ltd. receives premium on merger 12, the synergy for merger is (all amounts are in ₹ Lakhs) —

a) ₹8
b) ₹20
c) ₹32
d) ₹38

(ix) This is the estimated price for the transfer of an asset or liability between identified knowledgeable and willing parties that reflects the respective interests of those parties

a) Market Value
b) Liquidation Value
c) Equitable Value
d) Investment Value

(x) Six Sigma is a business-driven, multi-dimensional structured approach to

a) Reducing process variability
b) Lowering Defects
c) Improving Processes
d) All of the above

**(b) Read the following scenario and answer the following questions: [5 x 2 = 10]**

There are four firms (A, B, C and D) which operates under similar conditions and comparable. The top management of Firm B is worried about the profitability of the firm and anticipates that the firm's operational efficiency is relatively poor which is projected in declining market share of the company as well as other operational ratios.

Miss Lizi, the cost accountant of Firm B has been authorised by the top management to look into the matter and report back. Miss Lizi is able to extract the following data of the four firms.

| Firm | Capital Employed (₹ in Millions) | Value added (₹in Millions) |
|---|---|---|
| A | 8.6 | 1.8 |
| B | 2.2 | 0.2 |
| C | 15.6 | 2.8 |
| D | 31.6 | 4.1 |

She is of the opinion that the value added is the comparable output and the capital employed is the comparable input. Accordingly, she extracts the data of the two variable across the four firms.

Choose the correct option from the given alternatives based on the above scenario:

(i) Which firm has the highest efficiency?
- a. A
- b. B
- c. C
- d. D

(ii) Relative efficiency of Firm B is
- a. 85.88
- b. 43.40
- c. 62.08
- d. 100

(iii) For Inefficient firm,
- a. Input target = Actual Input
- b. Input target > Actual Input
- c. Input target < Actual Input
- d. Input target = Input Slack

(iv) Input Slack for Firm B is
- a. 2.2
- b. 1.245
- c. 0
- d. 0.955

(v) Output Target for Firm B is
- a) ₹0.46 million
- b) ₹0.26 million
- c) ₹0.95 million
- d) ₹0.80 million

**SECTION – B**

**(Answer any five questions out of seven questions given. Each question carries 14 Marks.) [5x14=70]**

**2. (a)** Explain the four intrinsic flows of the supply chain and Components of Supply Chain Management. **[7]**

**(b)** Distinguish between Six Sigma and Total Quality Management. **[7]**

**3. (a)** A radio manufacturer produces "x" sets per week at total cost of $x^2 + 78x + 2500$. He is a monopolist and the demand function for his product is $x = (600\text{-}P)/8$, when the price is "p" per set. Demonstrate that maximum net revenue is obtained when 29 sets are produced per week and calculate the monopoly price. **[7]**

**(b)** Explain the qualitative and quantitative methods of risk analysis. **[7]**

**4. (a)** Explain the Five Components of DuPont Analysis. **[7]**

**(b)** Using Altman's Model (1968) of Corporate Distress Prediction, Calculate the Z score of S & Co. Ltd., whose five accounting ratios are given as below and Interpret, its financial position.
The five variables are:
(i) Working Capital to Total Assets =25%
(ii) Retained Earnings to Total Assets = 30%
(iii) EBIT to Total Assets = 15%
(iv) Market Value of Equity Shares to Book Value of Total Debt =150%
(v) Sales to Total Assets = 2 times. **[7]**

**5. (a)** ABC Ltd has FCFF of ₹170 Crores and FCFE of ₹130 Crores. ABC Ltd's WACC is 13% and its cost of equity is 15%. FCFF is expected to grow forever at 7% and FCFE is expected to grow forever at 7.5%. ABC Ltd has debt outstanding at ₹1500 Crores. Calculate the value of ABC Ltd using FCFF approach and FCFE approach. **[7]**

**(b)** Quinton Johnston is evaluating TMI Manufacturing Company, Ltd., which is headquartered in Taiwan. In 2019, when Johnston is performing his analysis, the company is unprofitable. Furthermore, TMI pays no dividends on its common shares. Johnston decides to value TMI Manufacturing by using his forecasts of FCFE. Johnston gathers the following facts and assumptions.
(i) The company has 17 billion shares outstanding.
(ii) Sales will be 5.5 billion in 2020, increasing at 28% annually for the next four years (through 2024).
(iii) Net income will be 32% of sales.
(iv) Investment in fixed assets will be 35% of sales; investment in working capital will be 6% of sales;
(v) Depreciation will be 9% of sales.
(vi) 20% of the investment in assets will be financed with debt.
(vii) Interest expenses will be only 2% of sales.

(viii) The tax rate will be 10%. TMI Manufacturing's beta is 2.1; the risk-free government bond rate is 6.4%;

(ix) The equity risk premium is 5%.

(x) At the end of 2024, Johnston projects TMI will sell for 18 times earnings.

Calculate the value of one ordinary share of TMI Manufacturing Company. **[7]**

**6. (a)** From the following details, Evaluate, the total value of human resources for employee groups - skilled and un-skilled as per Lev and Schwartz (1971) model.

| Particulars | Skilled | Un-Skilled |
|---|---|---|
| (i) Annual average earning of an employee till age of retirement | ₹ 1,00,000 | ₹ 60,000 |
| (ii) Age of retirement | 65 years | 62 years |
| (iii) Discount rate | 20% | 20% |
| (iv) No. of employees in the group | 25 | 20 |
| (v) Average age | 62 years | 60 years |

It is assumed that employees will leave the organization only on retirement. **[7]**

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

(i) Beta for the year 2023-24: 1.05

(ii) Risk free rate 12%

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

(iv) Extracts from the liabilities side of balance sheet as at 31st March, 2024:

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

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

(vi) Interest deducted from profit ₹487.00 lakhs

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

Calculate Economic Value Added of Sandeep Ltd. as on $31^{st}$ March 2024. **[7]**

**7. (a)** Q Ltd. wants to acquire R Ltd. and has offered a swap ratio of 1: 2 (0.5 shares for every one share of R Ltd.). Following information is provided:

| Particulars | Q Ltd. | R Ltd. |
|---|---|---|
| Profit after tax (₹) | 18,00,000 | 3,60,000 |
| Equity shares outstanding (Nos.) | 6,00,000 | 1,80,000 |
| EPS (₹) | 3 | 2 |
| P/E Ratio | 10 times | 7 times |
| Market price per share (₹) | 30 | 14 |

(i) Calculate, the number of equity shares to be issued by Q Ltd., for acquisition of R Ltd.

(ii) Calculate the EPS of Q Ltd., after the acquisition.

(iii) Evaluate the equivalent earnings per share of R Ltd.

(iv) Calculate the expected market price per share of Q Ltd., after the acquisition, assuming its P/E multiple remains unchanged.

(v) Evaluate the market value of the merged firm. **[7]**

**(b)** R Ltd. is intending to acquire S Ltd. (by merger) and the following information is available in respect of both the companies—

| Particulars | R ltd | S ltd |
|---|---|---|
| Total current earnings | ₹ 2,50,000 | ₹ 90,000 |
| Number of outstanding shares | 50,000 | 30,000 |
| Market price per share | ₹ 21 | ₹ 14 |

You are required to—

(i) Calculate Present EPS of both the companies.

(ii) If the proposed merger takes place, evaluate, what would be the new EPS for R Ltd. (assuming that merger takes place by exchange of equity shares and the exchange ratio is based on the current market price).

(iii) Calculate the exchange ratio if S Ltd., wants to ensure the same earnings to members as before the merger took place. **[7]**

**8. (a)** From the following income statement, illustrate a common size statement and also interpret the result.

Income Statement for the year ended 31$^{st}$ March

| | 2023 (₹) | 2024 (₹) |
|---|---|---|
| Net Sales | 10,50,000 | 13,50,000 |
| Less : - Cost of goods sold | 5,70,000 | 6,45,000 |
| Gross Profit | 4,80,000 | 7,05,000 |
| Less :- Other operating expenses | 1,50,000 | 2,16,000 |
| Operating profit | 3,30,000 | 4,89,000 |
| Less :- Interest on long term debt | 60,000 | 51,000 |
| Profit before tax | 2,70,000 | 4,38,000 |

**[7]**

**(b)** Highland Company is considering the acquisition of Lowland Company in a stock-for-stock transaction in which Lowland Company would receive ₹90 for each share of its common stock. Highland company does not expect any change in its price/earnings ratio multiple after the merger and chooses to value Lowland company conservatively by assuming no earnings growth due to synergy.

Calculate:

(i) The purchase price premium

(ii) The exchange ratio

(iii) The number of new shares issued by Highland company.

(iv) Post-merger EPS of the combined firms

(v) Pre-merger EPS of the Highland company

(vi) Pre-merger P/E ratio

(vii) Post-merger share price
(viii) Post-merger equity ownership distribution.

The following additional information is available.

| Particulars | Highland | Lowland |
|---|---|---|
| Earnings | ₹ 2,50,000 | ₹ 72,500 |
| Number of Shares | 1,10,000 | 20,000 |
| Market Price per share | ₹ 50 | ₹ 60 |

**[7]**