FINAL EXAMINATION SET 1

MODEL QUESTION PAPER

PAPER – 20A

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.

Where considered necessary, suitable assumptions may be made and clearly indicated in the answer.

SECTION – A : STRATEGIC PERFORMANCE MANAGEMENT

Answer to Question No. 1 and 5 are compulsory; answer any two from Question No. 2, 3 & 4.

1. (a) Choose the correct alternative. Provide justification in each case. 1 mark is allotted for correct selection and 1 mark for the justification.: [5 × 2 = 10]

(i) Which one of the following is not a form of Customer Relationship Management (CRM) and why?

a. Strategic CRM

b. Operational CRM

c. Analytical CRM

d. Tactical CRM

(ii) The prices which are fixed and enforced by the Government and regulatory in nature, is called ______________. Provide a brief justification.

a. Dual Pricing

b. Administered Pricing

c. Shadow Pricing

d. Multiple Product Pricing

(iii) Which one of the below mentioned in not a modern theory of the firm? Why?

a. Baumol's sales maximisation

b. Shareholder's wealth maximisation

c. Marri's model of maximisation of Firm's Growth rate

d. Williamson's model of managerial discretion

(iv) The total revenue function and the total cost function for a firm the following is given as under

Total revenue (TR) = $4000Q - 33Q^2$ and

Total cost (TC) = = $2Q^3 - 3Q^2 + 400Q + 5000$,

Assuming $Q > 0$, the maximum profit of the firm is

a. ₹ 39,000

b. ₹ 93,000

c. ₹ 52,000

d. ₹ 25,000

(v) The Average Cost of a firm is given by the function,

$Average\ Cost\ = x^3 + 12x^2 - 11x$, then the marginal cost will be:

a. $4x^3 + 36x^2 - 22x$

b. $x^4 + 12x^3 - 11x^2$

c. $2x^2 + 24x - 11$

d. *None of the above.*

2. (a) What are the components of the decision grid analysis (DGA)? Illustrate the four segments of a decision grid along with explanation. **[3+4=7]**

(b) Answer both the questions:

(i) 'With the advent of big data and its implication for the business Analytical Customer Relationship Management (CRM) has gained strategic importance' – explain.

(ii) "Balanced Score Card (BSC) can be used to improve strategic performance in several ways." — Examine the areas where BSC can be used to improve performance of an organisation. Write down the steps in developing Balanced Score Card. Discuss the information to be required for performance measurement under Balanced Score Card with reasons. **[3+6=9]**

3. (a) The following is the excerpts from the financial records of Tinku LLP and Pinku LLP. You are required

- to calculate the ROE of both the companies for both the years and
- analyse the performance of the two companies on the basis of the DuPont analysis

₹ in Thousands

	Tinku LLP		Pinku LLP.	
	2021	**2022**	**2021**	**2022**
Net Income	1,000	1,200	2,100	2,100
Revenue from operation	10,000	10,000	17,500	17,500
Revenue from operation	10,000	10,000	17,500	17,500
Average Assets	5,000	4,800	8,750	8,750
Average Assets	5,000	4,800	8,750	8,750
Average Equity	2,000	2,000	5,000	3,500

[6+4=10]

(b) Answer both the questions:

(i) What is Six Sigma? Is Six Sigma a part of Total Quality Management?

(ii) Critically analyse the two methodologies for deployment of Six Sigma. **[6]**

4. (a) Sulekha Inc. produces particular Fountain Pen Ink. It follows a price differentiation strategy and separately brands the same product. Thus for Sulekha Inc. there arises possibility of discriminating between two markets; market A and market B where the demands (for the same ink), respectively, are

$Q_1 = 21- 0.1P_1$ ------ (in Market A)

$Q_2 = 50 - 0.4 P_2$ ------ (in Market B)

Total cost = 2000+10Q where $Q = Q_1+ Q_2$.

I. Suggest the price the producer will charge in order to maximize profits in the following situations:

(i) with discrimination between markets and

(ii) without discrimination?

(II) Compare the profit differential between discrimination and nondiscrimination. **[4+4+1=9]**

(b) From the following ascertain the stage of sickness and comment on this

Balance Sheet (extract) of Q Ltd. as on 31 March 2023

Liabilities	₹ in Crores	Assets	₹ in Crores
Equity Shares	20.80	Fixed Assets	105.60
Long term Liabilities	104.00	Current Assets	57.60
Current Liabilities	78.40	Profit and Loss Account	40.00
	203.20		203.20

Additional Information:

(i) Depreciation written off ₹ 8 crores.

(ii) Preliminary Expenses written off ₹ 1.60 crores.

(iii) Net Loss ₹ 25.60 crores.

Ascertain the stage of sickness using the NCAER model. **[7]**

5. Mr Sharma, a Cost Accountant by profession is an independent financial analyst. He extracted the respective ratios (Note 1) and calculated the overall Altman Z-score for Enron Corporation during the period 1996 to 2000 which is given as under (Table 1)

Years	1996	1997	1998	1999	2000
XI	0.020	0.01	(0.01)	0.02	0.04
X2	0.174	0.11	0.11	0.11	0.07
X3	0.253	0.08	0.18	0.20	0.13
X4	0.565	0.469	0.663	0.922	0.724
X5	0.823	0.90	1.06	1.20	1.54
Score	1.84	1.58	2.00	2.45	2.49

Source: Enron Corp Data from US SEC Edgar (1996-2000)

Note 1

$$X_1 = \frac{Net\,Working\,Capital}{Total\,assets}$$

$$X_2 = \frac{Retained\,earnings}{Total\,assets}$$

$$X_3 = \frac{Earnings\,before\,Interest\,and\,Taxes}{Total\,assets}$$

$$X_4 = \frac{Market\,Value\,of\,equity}{Book\,Value\,of\,total\,liabilities}$$

$$X_5 = \frac{Sales}{Total\,assets}$$

Z = Overall Index = = 1.2 X_1 + 1.4 X_2 + 3.3 X_3 + 0.6 X_4 + 0 .999 X_5

Mr Sharma also extracted the respective ratios (see note below) and calculated the Beneish M-Score for Enron Corporation during the period 1996 to 2000 which is given as under (Table 2);

Index	Non-Manipulator	Manipulator
DSRI	I.030	1.460
GMI	1.041	1.190
AGI	1.040	1.250
SGI	1.134	1.610
DEPI	I.001	1.077
SGAI	1.001	1.041
LVGI	I.037	1.111
TATAI	0.01B	0.031

Source: Source: Adapted from Beneish M-score model

Where,

Beneish M-score = $-4.84 + 0.92 \times DSRI + 0.528 \times GMI + 0.404 \times AQI + 0.892 \times SGI + 0.115 \times DEPI - 0.172 \times SGAI - 0.327 \times LVGI + 4.679 \times TATA$

Note 2

DSRI - Days' Sales in Receivables Index = $\dfrac{Accounts\,Receivable\,(t) / Sales\,(t)}{Accounts\,Receivable\,(t-1) / Sales\,(t-1)}$

GMI - Gross Margin Index = $\dfrac{Sales\,(t) - Cost\,of\,Sales\,(t) / Sales\,(t)}{Sales\,(t-1) - Cost\,of\,Sales\,(t-1) / Sales\,(t-1)}$

AQI - Asset Quality Index = $\dfrac{\text{Total Assets }(t)-\text{PPE }(t) \big/ \text{Total Assets }(t)}{\text{Total Assets }(t-1)-\text{PPE }(t-1) \big/ \text{Total Assets }(t-1)}$

SGI - Sales Growth Index = $\dfrac{\text{Sales or Revenue }(t)}{\text{Sales or Revenue }(t-1)}$

DEPI - Depreciation Index = $\dfrac{\text{Depreciation }(t) \big/ \text{Depreciation+PPE }(t)}{\text{Depreciation }(t-1) \big/ \text{Depreciation+PPE }(t-1)}$

SGAI - Sales, General, and Administrative Expenses Index

$= \dfrac{\text{Sales,distribution and administrative cost }(t) \big/ \text{Sales }(t)}{\text{Sales,distribution and administrative cost }(t-1) \big/ \text{Sales }(t-1)}$

LVGI - Leverage Index = $\dfrac{\text{Total Liabilities}}{\text{Total Assets}}$

TATA - Total Accruals to Total Assets = $\dfrac{\text{Working Capital}-\text{Depreciation}}{\text{Total Assets}}$

You, as a new recruit, have been asked by Mr Sharma to

i. Determine the value of overall Altman Z-score and Beneish M Score of the company from the given information and formulea.

ii. Interpret the above results and formulate two separate sets of action points which the company should execute to improve both the scores. **[8]**

SECTION – B : BUSINESS VALUATION

Answer to Question No. 6 and 10 are compulsory; answer any two from Question No. 7, 8 & 9.

6. **(a) Choose the correct alternative. Provide justification in each case. 1 mark is allotted for correct selection and 1 mark for the justification.: [5 × 2 = 10]**

(i) Which of the following would impact DCF more and why?

a. Discount rate.
b. Sales growth.
c. Both above.
d. None of the above.

(ii) Which of the following types of items are least likely included in other comprehensive income and why?

a. Loss under the revaluation.
b. Unrealized gains on equity shares.
c. Realized gains on securities classified as available for sale.
d. All the above

(iii) Mr. X is evaluating the investment merits of Bing Corp., a successful motorcycle manufacturer. X is forecasting a dividend in year 1 of INR 120 per share, a dividend in year 2 of INR 240 per share, and a dividend in the year 3 of INR 360 per share. After year 3, X expects dividends to grow at a rate of 6% per year. X calculates a beta of 1.3 for Bing. X expects the BSE index return 8%. The risk free rate of return is 2%. Using the multistage dividend discount model, X's intrinsic value is closest to:

a. INR 8166.4
b. INR 2366.6
c. INR 9166.4
d. None of the above.

(iv) Tangible assets are usually valued using any of the premises except ________. Why?

a. Forced sale
b. Going concern
c. Orderly liquidation
d. Highest and best use

(v) The value of Alpha ltd. and Beta ltd. are INR 50 lac and INR 25 lac respectively. On merger their combined value INR 94 lac. If Beta ltd. Receives premium on merger INR 15 lac, what will be the synergy gain on merger?

a. INR 19 lac
b. INR 24 lac
c. INR 34 lac
b. None of the above

7. (a) What is Enterprise Value? Explain its components and significance?

(b) Mr A is a shareholder of S Pvt Ltd. He has is planning to sell his shares. He has engaged you to assess the Fair Market Value of S Pvt Ltd as on 31.3.2023 under Rule 11UA of Income Tax Rules.

The Balance sheet of the company as on the 31st March 2023 is as follows-

Liabilities	INR	Assets	INR
Equity Share Capital	50,01,12,400	Tangible Assets	92,80,88,839
Reserve & Surplus	12,26,03,279	Non-Current Investment	25,00,000
Long- term Borrowings	86,18,20,170	Capital Work-in-progress	9,79,46,867

Deferred Tax Assets	3,30,53,680	Long term Loans & Advances	2,08,32,646
Short Term Borrowings	27,41,38,266	Inventories	76,55,82,793
Trade Payables	26,38,76,597	Trade Receivables	17,11,31,446
Other Current Liabilities	20,87,20,117	Cash & Cash Equivalents	15,45,04,345
Short Term Provisions	92,72,645	Other Current Assets	13,30,10,218
TOTAL	**2,27,35,97,154**	**TOTAL**	**2,27,35,97,154**

Additional information:

1. Tangible Assets includes Land which is recorded in the books at its book value of INR 10 Crore. As per the Government records, its Stamp Duty value is estimated to be INR 12.5 Crore.
2. Non-Current Investments represents investment in 25000 shares of Z Pvt Ltd. Mr A has provided a valuation report from a Chartered Accountant that shows that the value of Z Pvt Ltd under Rule 11UA was INR 79 per share.
3. The Paid-up value of Equity Share is INR 10/-

Suggest with supporting calculations, the Fair Market Value of S Pvt. Ltd.

[9+7=16]

8. (a) Spectacular Ltd. is considering evaluating its brand value.
It has projected the revenues for the next 5 years as follows-

Year	Revenue (₹)
1	6,84,000
2	6,97,680
3	7,11,634
4	7,25,866
5	7,40,384

The Royalty rate for similar businesses is 10%. The company believes that the brand specific revenue is 3% of the Royalty factor. Assuming that the company will not enjoy superior brand power for more than 5 years, and a discount rate of 12%, what should be the value of the brand?

(b) The following information is available to you in relation to the acquisition of Dean Limited and the target Dale Limited.

Particulars	Dean Limited	Dale Limited
Earnings after tax (INR)	284 lacs	30 lacs
Number of shares outstanding	30 lacs	10 lacs
P/E ratio	10	5

Analyse the above information to determine the following:

(i) the swap ratio in terms of current market prices.

(ii) the EPS of Dean Limited after acquisition.

(iii) the expected market price per share of Dean Limited after acquisition assuming that P/E ratio of Dean Limited remains unchanged.

(iv) the market value of the merged firm.

(v) the gain/loss for shareholders of the two independent companies after acquisition. **[7+9=16]**

9. (a) How will you calculate Economic Value Added and Market Value Added? How are Economic Value Added and Market Value Added related to each other?

(b) You have been engaged to value Excel Ltd. which is a potential target for Gama Ltd.

You have received the management forecasted financial statements the extract of which is given below.

Amount in INR Lakhs	2023	2024	2025	2026	2027
Revenues	12000	12960	13997	15117	16326
Cost of Goods sold	7200	7776	8475	9238	10069
Gross Profit	**4800**	**5184**	**5522**	**5879**	**6257**
General Expenses	1344	1452	1582	1725	1880
Depreciation	420	454	494	539	587
EBIT	**3036**	**3278**	**3446**	**3615**	**3790**
Net Interest Expenses	556	528	502	477	453
EBT	**2480**	**2750**	**2944**	**3138**	**3337**
Taxes	868	963	1030	1098	1168
PAT	**1612**	**1788**	**1914**	**2040**	**2169**

Additional Information:

Change in Non-Cash Working Capital	384	415	452	493	537
Capex	1104	1192	1300	1417	1544

On further inquiry and assessment, you discovered that applicable tax rate would be 35%, the cost of capital that may be used for discounting is 9.5% and the long-term growth forecast for the company may be taken at 6%.

Required:

Analyse the Enterprise Value of Gama Ltd. **[8+8=16]**

10. Following are the financials of Summer Ltd. and Monsoon Ltd. for the current financial year. Both the firms operate in the same industry:

Balance Sheet as on 31st March 20X2

Particulars	Summer Ltd.	Monsoon Ltd.
Total Current Assets	14,00,000	14,00,000
Total Fixed Assets	24,00,000	10,00,000
Total Assets	**38,00,000**	**24,00,000**
Equity Capital (of INR 10 each)	14,00,000	12,00,000
Retained earnings	2,00,000	
14% Long-term debt	10,00,000	7,00,000
Total Current Liabilities	12,00,000	5,00,000
Total Liabilities	**38,00,000**	**24,00,000**

Income Statement for the year ended 31st March 20X2

Particulars	**Summer Ltd.**	**Monsoon Ltd.**
Net sales	44,50,000	27,00,000
Cost of goods sold	37,60,000	24,00,000
Gross Profit	6,90,000	3,00,000
Operating expenses	2,00,000	1,00,000
Interest	50,000	50,000
Earnings before taxes	4,40,000	1,50,000
Taxes (40%)	2,64,000	90,000
Earnings after taxes (EAT)	**1,76,000**	**60,000**

Additional Information:

Number of equity shares	8000	7000
Dividend pay-out ratio (D/P)	40%	60%
Market price per share (MPS)	300	100

Assume that the two firms are in the process of negotiating a merger through an exchange of equity shares. You have been asked to assist in establishing equitable exchange terms, and are required to-

(i) Decompose the share prices of both the companies into EPS and P/E components, and also segregate their EPS figures into return on equity (ROE) and book value/intrinsic value per share (BVPS) components.

(ii) Estimate future EPS growth rates for each firm.

(iii) Based on expected operating synergies, Summer Ltd. estimates that the intrinsic value of Monsoon Ltd.'s equity share would be INR 200 per share on its acquisition. You are required to develop a range of justifiable equity share exchange ratios that can be offered by Summer Ltd. to Monsoon Ltd.'s shareholders. Based on your analysis in parts (i) and (ii) would you expect the negotiated terms to be closer to the upper, or the lower exchange ratio limits? and why?

(iv) Calculate the post-merger EPS based on an exchange ratio of 0.4:1 being offered by Summer Ltd. Indicate the immediate EPS accretion or dilution, if any, that will occur for each group of shareholders.

(v) Based on a 0.4:1 exchange ratio and assuming that Summer Ltd.'s pre-merger P/E ratio will continue after the merger, estimate the post-merger market price. Show the resulting accretion or dilution in pre-merger market prices. **[8]**