SECTION - A

1. (a)

(i)	(A)
(ii)	(B)
(iii)	(B)
(iv)	(B)
(v)	(A)
(vi)	(C)
(vii)	(C)
(viii)	(C)
(ix)	(A)
(x)	(B)

1. (b)

(xi)	(C)
(xii)	(A)
(xiii)	(A)
(xiv)	(D)
(xv)	(A)

SECTION – B

2. (a)

The Practices used for Optimization of O2C Process are as follows:

(i) Automation of administrative tasks:
With the level of technological development available today, automation of office and administration has become a basic requirement. Manual processing of administrative tasks is error prone. Automation increases efficiency of repetitive tasks like billing, invoice collection, payment collection, and credit management.

(ii) Standardization of the O2C process for the entire company:
The company should be able to standardize the O2C process for all the product lines irrespective of its size. Standard measures would include efforts to decrease the O2C cycle time. Even a small diminution of the O2C cycle time would result in increased release of working capital that would relieve financial stress on the day-to-day activities.

(iii) Preparation of electronic invoices:
It is already noted that manual processing is error prone and may create inefficient operations. Electronic invoices are important aspect of the automation process and would ultimately lead to increased customer satisfaction.

(iv) Re-evaluation of credit policies:
It is important that companies re-evaluate the credit policies in order to optimise resources, reduce credit risk, and improve cash flow. This is an important measure for ensuring an optimised O2C cycle time.

(v) Efficiency in billing process:
Automated billing system along with real time billing improves customer satisfaction and improves O2C process efficiency. This is a crucial aspect in the service industry. For example, in a hospital, automated real time billing procedure facilitates quick discharge of patients and leads to customer satisfaction.

(vi) **Automated accounts receivable:**
Automated accounts receivable (AR) is the order of the day and many organisations are taking up the route as it benefits the organisation in managing repetitive tasks like scheduling payment reminders, archiving customer responses, enabling online payments and settling disputes.

(vii) **Data management:**
Various data management software are being used by organisations which brings in consistency across all the sub processes of the O2C cycle. Availability of data creates a transparent environment which improves the decision-making process and helps the credit management.

2. (b)

The four types of benchmarking classified according to the nature of the business they serve are enumerated below :

(i) **Internal benchmarking:**
in which comparisons are made between various Department within the same organisation. For example, in an undergraduate college, the number of classes taken in a particular department, say English department may be compared with the Benchmark, say the Philosophy department, which is considered so as it is the best department in the college in terms of final result.

(ii) **Competitive benchmarking:**
in which comparisons are made with direct competitors. For example, in XYZ College, the number of classes taken in a particular department, say English department may be compared with the number of classes taken in the English department of MNK College both of which caters to same area and thus compete with each other regarding the number of students' admittance.

(iii) **Industry benchmarking:**
in which the benchmarking partner is not a direct competitor, but does share the same industry as one's organisation. In the example cited in (b) above, if the colleges do not compete with each other regarding students' admittance, then the same is an example of industry benchmarking.

(iv) **Generic benchmarking:**
Generic benchmarking broadly conceptualizes unrelated business processes or functions that can be practiced in the same or similar ways regardless of the Industry.

The four types of benchmarking categorized based on the specific practices or processes being benchmarked are aligned below:

(i) **Product benchmarking:**
This is an age old practice of product oriented reverse engineering. Every organization buys its rival's products and tears down to find out how the features and performances etc., compare with its products. This could be the starting point for improvement.

(ii) **Process benchmarking:**
Process benchmarking is a crucial first step. It constitutes comparing and analysing the business processes of an organisation with those processes that are considered the best practices in the industry.

(iii) **Performance benchmarking:**
Performance benchmarking involves gathering and comparing quantitative data (i.e., measures or key performance indicators). It compares performances; and

(iv) **Strategic benchmarking:**
strategic benchmarking is comparing improvements in strategic performance of an organisation to that of performance leaders in similar field of activity, in addition to comparing them to the past performance of the organisation itself.

3. (a)

(i) Cost $= 300\chi - 10\chi^2 + \dfrac{1}{3}\chi^3$

Marginal Cost $= \dfrac{dc}{d\chi} = 300 - 20\chi + \chi^2$ (say, y)

In order that MC is minimum first derivative must be equal to zero and 2nd derivative must be positive.

Therefore $\dfrac{dy}{d\chi} = 2\chi - 20 \Rightarrow 2\chi = 20$

$\chi = 10$

$\dfrac{d^2y}{d\chi^2} = 2$, which is positive. It is minimum at $\chi = 10$.

(ii) Average Cost $= 300 - 10\chi + \dfrac{1}{3}\chi^2$ (y say)

$\dfrac{dy}{d\chi} = -10 + \dfrac{2}{3}\chi = 0$

$\Rightarrow \chi = 30/2 = 15$

$\dfrac{d^2y}{d\chi^2} = \dfrac{2}{3}\ \rangle = 0,$

Therefore, Average Cost is minimum of output at $\chi = 15$

(iii) Output at which Marginal Cost = Average Cost

$300 - 20\chi + \chi^2 = 300 - 10\chi + \dfrac{1}{3}\chi^2$

$-20\chi + 10\chi + \chi^2 - \dfrac{1}{3}\chi^2 = 0$

$-10\chi + \dfrac{2}{3}\chi^2 = 0$

$\dfrac{-30\chi + 2\chi^2}{3} = 0$

$2\chi^2 - 30\chi = 0$

$2\chi(\chi - 15) = 0$

$\chi - 15 = 0$

Therefore, x = 15

3. (b)

Risk Retention denotes acceptance of the loss or benefit arising out of a risk when it takes place. In short, it is also termed as self-insurance. This strategy is viable when the risks are small enough to be transferred at a cost that may be higher than the loss arising out of the risk itself. On the other hand, the risk can be so big that it cannot be transferred or insured. Such risks will have to be phased out when the eventuality occurs. War is an example as also are 'Acts of God' such as earthquakes and floods.

The reasons for risk retention can be cited are as follows:
  (1) Non-insurable business risks are borne for appropriate returns. It is well known a proverb that "no risk, no gain". If everything is predictable to mathematical precision, profits would not have arisen. But business is not a blind speculation. It involves vision to foresee future situations, strategies for keeping ahead of competition (in some way or the other) and finally, leadership for translating envisioned strategies into actions and results.

(2) Sometimes, such risks are so small that they are ignored and/or phased out when they surface.

(3) This method is also useful when the probability of occurrence is very low and a reserve built within the system over a period can take care of such losses arising out of risk retention. This is normally resorted to in businesses against credit risks that are inherent due to marketing on credit basis.

(4) In some cases, the subject, who is susceptible to risk, also becomes fully aware of the nature of risk.

In these situations, there is a certain amount of preparedness in the system due to risk retention.

4. (a)

(i) **Du-Pont Analysis of Lotus Ltd:**

Particulars	2023	2022	2021	2020	Comment
Net income (₹ in crore)	438	423	410	395	Growing
Revenue (₹ in crore)	2620	2450	2340	2240	Growing
Assets (₹ in crore)	1588	1468	1400	1335	Growing
Equity (₹ in crore)	790	726	685	650	Growing
DUPONT ANALYSIS					
Profit Margin = Net income/Revenue	16.72%	17.27%	17.52%	17.63%	Declining
Asset Turnover = Revenue/Assets	1.65	1.67	1.67	1.68	Declining
ROA (Return on Assets) = Profit Margin × Assets Turnover (%)	27.59	28.84	29.26	29.62	Declining
Equity Multiplier = Assets/Equity	2.01	2.02	2.04	2.05	Declining
ROE = (Return on Equity) = ROA × Equity Multiplier (%)	55.46	58.26	59.69	60.72	Declining

Profit margin which measures the operational efficiency is declining continuously.

(ii) Sales/ Total Assets at 1.65 indicates that assets are managed efficiently, although the same is also in the declining trend. The reason being the rate of increase in assets and rate of increase in revenue are mostly same in 2021 & 2022 whereas in 2023, the rate of increase in revenue is less than that of assets, as evident from the following calculations:

	2023	2022	2021
Rate of Increase in Assets (%) as compared to previous year	8.17	4.86	4.87
Rate of Increase in Revenue (%) as compared to previous year	6.94	4.70	4.46

Because of declining profit margin as well as asset turnover, ROA is also in declining trend.

(iii) Equity multiplier is also declining because the rate at which equity is increasing is more than of assets as is evident from the following calculations:

	2023	2022	2021
Rate of Increase in Assets (%) as compared to previous year	8.17	4.86	4.87
Rate of Increase in Equity (%) as compared to previous year	8.82	5.99	5.38

Because of declining trend both in ROA & Equity Multiplier, the ROE is also exhibiting a declining trend over the years.

4. (b)

Beneish M-Score:

Index	Individual Score	Coefficient	Composite Score
DSRI	0.500	0.920	0.460
GMI	1.210	0.528	0.639
AQI	0.810	0.404	0.327
SGI	1.250	0.892	1.115
DEPI	0.904	0.115	0.104
SGAI	0.730	-0.172	-0.126
LVGI	0.400	-0.327	-0.131
TATA	0.005	4.679	0.023
TOTAL			2.411
			-4.840
Beneish M-Score			-2.429

Advice:

As per Beneish M model, if the score is less than the cut off score (-2.22) then the company is not manipulating the earnings and if the score is greater than the cut off score then it advocates that company may be manipulating its earnings.

In the case of Fairy Tale Company, the Beneish M score is calculated as -2.429 which is less than the cut off M score of -2.22. This suggests that the company is not manipulating its earnings.

5. (a)

(i)   Assumption: The P/E of the stock remains the same under both alternatives.

Alternative I:

Pay ₹ 400 thousand in the form of dividend

Number of shares = (1700/10) = 170 thousand

Dividend per share = (400/170) = ₹ 2.35 per share

PE Ratio is 20/2 = 10

As P/E is constant, the share price depends only on earning power of the company and suppose earnings are going to remain at ₹ 2 per share, then the price will remain at ₹ 20 per share.

Alternative II:

Repurchase 400 thousand worth of shares

Number of shares repurchased = (400/20) thousand = 20 thousand shares.

Shares remaining = 170 – 20 = 150 thousand shares

Changed EPS = 2 × (170/150) = ₹ 2.27

PE Ratio continues to be same that is 10

Revised Price = 2.27 × 10 = ₹ 22.70

(ii)   Decision :

Alternative II is better as the price of the share increases to ₹ 22.70 from ₹ 20.

5. (b)

Valuation multiples for the comparable firms can be calculated as follows:

Particulars	Alpha Ltd	Beta Ltd	Gamma Ltd	Average
Price/Sales Ratio	1.21	1.38	1.63	1.41
Price/Earnings Ratio	7.67	6.59	8.80	7.69
Price/Book Value Ratio	2.40	2.64	3.44	2.83

Applying the multiples calculated in Step 1, the value of Sundar Televisions Ltd. can be calculated as follows:

Particulars	Average Multiple	Parameter	Value ₹ Crores
Price/Sales Ratio	1.41	250.00	352.50
Price/Earnings Ratio	7.69	40.00	307.60
Price/Book Value Ratio	2.83	100.00	283.00

By applying the weightage to the P/S ratio, P/E ratio and P/BV ratio we get:

[(352.50 × 1) + (307.60 × 2) + (283.00 × 1)] / (1+2+1) = 312.675, i.e. ₹ 312.675 crore is the value.

Therefore, the value of Sundar Televisions Ltd. is ₹ 312.675 Crore.

6. (a)

(i)   Required rate of return of Pinnacle Venture (KPE) = 40%.

Required value PE Investments 6 = 4000 × 5.3782 = ₹ 21513 million.

Estimated Equity Value 6 = 5000 × 6 + 600 – 2000 = ₹ 28600 million.

Ownership Share in the Best Systems:

$$= \frac{21513}{28600} \times 100 = 75.22 \ \%$$

(ii)   Post-Money Investment Value of the Best Systems' Equity :

$$= \frac{4000}{0.7522}$$
$$= ₹ \ 5317.73 \ million$$

(iii)   Pre-Money Investment Value of the Best Systems' Equity

= 5317.73 – 4000 = ₹ 1317.73 million

6. (b)

(i)   Minimum Price of the Warrant :

= ₹ (10.00 – 11.71) × 1.0 = (-) ₹ 1.71

Thus, the minimum price on this warrant is considered to be zero, because the price cannot be negative. Since shares are traded at ₹ 10, the warrant holders will not pay ₹ 11.71 to purchase the same stock.

(ii)   Warrant Premium

= 3 – 0 = ₹ 3

(iii)   When Current price = ₹ 16.38 :

(a)   **Minimum price of Warrant :**

= (16.38 – 11.71) × 1.0 = ₹ 4.67

(b)   **Warrant Premium :**

= ₹ 9.75 – ₹ 4.67 = ₹ 5.08

7. (a)

Let the value of Sandy Co. and Vindi Co. be represented as PV_S and PV_V and the value of the combined firm PV_{SV}.

(i) **Gain from the Merger:**

Gain from the merger = reduction of costs due to the merger.

Sandy Co estimates that by combining the two companies, it will reduce marketing and administrative costs by ₹ 50000 per year perpetually.

Cost of capital = 10%

Hence, PV of gain = ₹ 50000/10% = ₹ 500000

(ii) **Cost of the Cash Offer:**

= ₹ 1400000 – ₹ 1000000 = ₹ 400000

(iii) **Cost of the Stock Alternative:**

When the sellers receive N shares worth PV_{SV}, the cost is given as

Cost = N X PV_{SV} – PV_V

Here, 50% of the combined value of the firm is paid as stock.

Combined Firm Value = Gain + (PV_S + PV_V)

= ₹ 500000 + ₹ (2000000 + 1000000) = ₹ 3500000.

Hence Value of Stock offered = 0.50 × ₹ 3500000 = ₹ 1750000.

Hence, cost of the stock alternative = ₹ 1750000 – ₹ 1000000.

= ₹ 750000.

7. (b)

(i) & (ii) Calculation of P/E Ratio

Particulars	Tarun Ltd.	Arun Ltd.	Barun Ltd.
No. of Equity Shares (in million)	45	18	9
Earnings (₹ millions)	90	18	18
EPS (₹)	2	1	2
Market Price of each share (₹)	60	37	46
P/E Ratio	30	37	23

Analysis of EPS of Tarun Ltd. after acquisition of Arun Ltd. & Barun Ltd.

Particulars	Tarun Ltd.	Arun Ltd.	Barun Ltd.
Exchange ratio in Tarun Ltd.		1.23	0.77
Value of Shares (₹ million)	2700	666	414
No. of Tarun Ltd. shares to be given (million)		666/60=11.10	414/60 =6.9
Total Earnings after acquisition (₹ million) for both options		108	108
Total No. of Shares (million)		56.10	51.9
E.P.S. (₹)		1.93	2.08

Recommendation & Justification:

Yes, the Merger with only Barun Ltd. will be recommended to increase the value to the Shareholders of Tarun Ltd.

Since after merger of Tarun Ltd. with Barun Ltd, combined EPS is higher than the earlier pre-merger EPS of Tarun Ltd. on the other hand, after merger of Tarun Ltd. with Arun Ltd., combined EPS is lower than the earlier pre-merger EPS of Tarun Ltd. the merger with only Barun Ltd. is suggested.

8. (a)

(i) **The relevant annual cash flows from the proposed soda fountain are:**

	Amount in ₹
Incremental revenue	100000
Increment Cost :	
Food and materials	20000
Wages and salaries	16000
Utilities	2000
Opportunity Cost: Profit contribution lost on regular sales	54000
Total incremental cost	92000
Net incremental annual cash flow	8000

(ii) **Incremental investment ₹ 20000**

No, the NPV for the proposed soda fountain should be calculated to determine the economic viability of the project.

NPV = (Incremental annual cash flow) (PVIFA, N = 3, i = 12%) – ₹ 20000

= ₹ 8000 (2.4018) – ₹ 20000

= –₹ 785.60 (A Loss)

Because NPV < 0, Drug Store should not undertake the soda fountain investment project

8. (b)

(i) Purchase price premium = 90/60 = 1.5

(ii) Exchange Ratio = 90/50 = 1.8

Acquiring company issues 1.8 shares of stock for each of Target Company's stock.

(iii) New shares issued by acquiring Company = 20000 x 1.8 = 36000 Nos.

(iv) Post-merger EPS of the combined Companies.

Combined Earnings = (250000 + 72500) = ₹ 322500

Total Shares outstanding of the New Entity

= 110000 + 36000 = 146000

EPS = ₹ 322500 ÷ 146000 = ₹ 2.209

(v) Pre-merger EPS of the acquiring company

EPS = 250000/110000 = ₹ 2.273

(vi) Pre-merger P/E = 50/2.273 = 22.00

(vii) Post-merger share price = 2.209 × 22.00 = ₹ 48.60 (as compared to ₹ 50 Pre-merger)

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