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**PAPER – 2 : STRATEGIC FINANCIAL MANAGEMENT**

*Question No.1 is compulsory.  
Answer any five questions from the remaining six questions.  
Working notes should form part of the answer.*

**Question 1**

- (a) *MNP Ltd. has declared and paid annual dividend of ₹ 4 per share. It is expected to grow @ 20% for the next two years and 10% thereafter. The required rate of return of equity investors is 15%. Compute the current price at which equity shares should sell.*

*Note: Present Value Interest Factor (PVIF) @ 15%:*

*For year 1 = 0.8696;*

*For year 2 = 0.7561* (5 Marks)

- (b) *ABC Chemicals is evaluating two alternative systems for waste disposal, System A and System B, which have lives of 6 years and 4 years respectively. The initial investment outlay and annual operating costs for the two systems are expected to be as follows:*

	<b>System A</b>	<b>System B</b>
<i>Initial Investment Outlay</i>	<i>₹ 5 million</i>	<i>₹ 4 million</i>
<i>Annual Operating Costs</i>	<i>₹ 1.5 million</i>	<i>₹ 1.6 million</i>
<i>Salvage value</i>	<i>₹ 1 million</i>	<i>₹ 0.5 million</i>

*If the hurdle rate is 15%, which system should ABC Chemicals choose?*

*The PVIF @ 15% for the six years are as below:*

<i>Year</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>
<i>PVIF</i>	<i>0.8696</i>	<i>0.7561</i>	<i>0.6575</i>	<i>0.5718</i>	<i>0.4972</i>	<i>0.4323</i>

*(5 Marks)*

- (c) *AXY Ltd. is able to issue commercial paper of ₹ 50,00,000 every 4 months at a rate of 12.5% p.a. The cost of placement of commercial paper issue is ₹ 2,500 per issue. AXY Ltd. is required to maintain line of credit ₹ 1,50,000 in bank balance. The applicable income tax rate for AXY Ltd. is 30%. What is the cost of funds (after taxes) to AXY Ltd. for commercial paper issue? The maturity of commercial paper is four months. (5 Marks)*
- (d) *The Bank sold Hong Kong Dollar 1,00,000 spot to its customer at ₹ 7.5681 and covered itself in London market on the same day, when the exchange rates were*

*US \$1 = HK\$ 8.4409      HK \$ 8.4500*

*Local inter-bank market rates for US\$ were:*

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Spot US\$1 = ₹ 62.7128 ₹ 62.9624

Calculate the cover rate and ascertain the profit or loss in the transaction.

Ignore brokerage.

(5 Marks)

Answer

(a)  $D_0 = ₹ 4$

$D_1 = ₹ 4 (1.20) = ₹ 4.80$

$D_2 = ₹ 4 (1.20)^2 = ₹ 5.76$

$D_3 = ₹ 4 (1.20)^2 (1.10) = ₹ 6.336$

$$P = \frac{D_1}{(1+k_e)} + \frac{D_2}{(1+k_e)^2} + \frac{TV}{(1+k_e)^2}$$

$$TV = \frac{D_3}{k_e - g} = \frac{6.336}{0.15 - 0.10} = 126.72$$

$$P = \frac{4.80}{(1+0.15)} + \frac{5.76}{(1+0.15)^2} + \frac{126.72}{(1+0.15)^2}$$

$$= 4.80 \times 0.8696 + 5.76 \times 0.7561 + 126.72 \times 0.7561 = 104.34$$

(b) PV of Total Cash Outflow under System A

	₹
Initial Outlay	50,00,000
PV of Annual Operating Cost (1-6 years) 15,00,000 x 3.7845	56,76,750
Less: PV of Salvage Value ₹ 10,00,000 x 0.4323	(4,32,300)
	1,02,44,450
PVAF (15%, 6)	3.7845
Equivalent Annual Cost (1,02,44,450/3.7845)	27,06,949

PV of Total Cash Outflow under System B

Initial Outlay	40,00,000
PV of Annual Operating Cost (1-4 years) 16,00,000 x 2.855	45,68,000
Less: PV of Salvage Value ₹ 5,00,000 x 0.5718	(2,85,900)
	82,82,100

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PVAF (15%, 4)	2.855
Equivalent Annual Cost (82,82,100/2.855)	29,00,911

Since Equivalent Annual Cost (EAC) is least in case of system A hence same should be opted.

(c)

	₹
Issue Price	50,00,000
Less: Interest @ 12.5% for 4 months	2,08,333
Issue Expenses	2,500
Minimum Balance	1,50,000
	46,39,167

$$\text{Cost of Funds} = \frac{2,10,833(1-0.30)}{46,39,167} \times \frac{12}{4} \times 100 = 9.54\%$$

(d) The bank (Dealer) covers itself by buying from the market at market selling rate.

Rupee – Dollar selling rate	= ₹ 62.9624
Dollar – Hong Kong Dollar	= HK \$ 8.4409
Rupee – Hong Kong cross rate	= ₹ 62.9624/ 8.4409
Cover Rate	= ₹ 7.4592
Profit / Loss to the Bank	
Amount received from customer (1 lakh × 7.5681)	₹ 7,56,810
Amount paid on cover deal (1 lakh × 7.4592)	<u>₹ 7,45,920</u>
Profit to Bank	<u>₹ 10,890</u>

### Question 2

(a) A multinational company is planning to set up a subsidiary company in India (where hitherto it was exporting) in view of growing demand for its product and competition from other MNCs. The initial project cost (consisting of Plant and Machinery including installation) is estimated to be US\$ 500 million. The net working capital requirements are estimated at US\$ 50 million. The company follows straight line method of depreciation. Presently, the company is exporting two million units every year at a unit price of US\$ 80, its variable cost per unit being US\$ 40.

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The Chief Financial Officer has estimated the following operating cost and other data in respect of proposed project:

- (i) Variable operating cost will be US \$ 20 per unit of production;
- (ii) Additional cash fixed cost will be US \$ 30 million p.a. and project's share of allocated fixed cost will be US \$ 3 million p.a. based on principle of ability to share;
- (iii) Production capacity of the proposed project in India will be 5 million units;
- (iv) Expected useful life of the proposed plant is five years with no salvage value;
- (v) Existing working capital investment for production & sale of two million units through exports was US \$ 15 million;
- (vi) Export of the product in the coming year will decrease to 1.5 million units in case the company does not open subsidiary company in India, in view of the presence of competing MNCs that are in the process of setting up their subsidiaries in India;
- (vii) Applicable Corporate Income Tax rate is 35%, and
- (viii) Required rate of return for such project is 12%.

Assuming that there will be no variation in the exchange rate of two currencies and all profits will be repatriated, as there will be no withholding tax, estimate Net Present Value (NPV) of the proposed project in India.

Present Value Interest Factors (PVIF) @ 12% for five years are as below:

Year	1	2	3	4	5
PVIF	0.8929	0.7972	0.7118	0.6355	0.5674

(10 Marks)

- (b) The equity shares of XYZ Ltd. are currently being traded at ₹ 24 per share in the market. XYZ Ltd. has total 10,00,000 equity shares outstanding in number; and promoters' equity holding in the company is 40%.

PQR Ltd. wishes to acquire XYZ Ltd. because of likely synergies. The estimated present value of these synergies is ₹ 80,00,000.

Further PQR feels that management of XYZ Ltd. has been over paid. With better motivation, lower salaries and fewer perks for the top management, will lead to savings of ₹ 4,00,000 p.a. Top management with their families are promoters of XYZ Ltd. Present value of these savings would add ₹ 30,00,000 in value to the acquisition.

Following additional information is available regarding PQR Ltd.:

Earnings per share : ₹ 4

Total number of equity shares outstanding : 15,00,000

Market price of equity share : ₹ 40

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*Required:*

- (i). *What is the maximum price per equity share which PQR Ltd. can offer to pay for XYZ Ltd.?*
- (ii) *What is the minimum price per equity share at which the management of XYZ Ltd. will be willing to offer their controlling interest? (4 + 2 = 6 Marks)*

**Answer**

- (a) Financial Analysis whether to set up the manufacturing units in India or not may be carried using NPV technique as follows:

I. Incremental Cash Outflows

	\$ Million
Cost of Plant and Machinery	500.00
Working Capital	50.00
Release of existing Working Capital	(15.00)
	535.00

II. Incremental Cash Inflow after Tax (CFAT)

- (a) Generated by investment in India for 5 years

	\$ Million
Sales Revenue (5 Million x \$80)	400.00
Less: Costs	
Variable Cost (5 Million x \$20)	100.00
Fixed Cost	30.00
Depreciation (\$500Million/5)	100.00
EBIT	170.00
Taxes@35%	59.50
EAT	110.50
Add: Depreciation	100.00
CFAT (1-5 years)	210.50
Cash flow at the end of the 5 years (Release of Working Capital)	35.00

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(b) Cash generation by exports

	\$ Million
Sales Revenue (1.5 Million x \$80)	120.00
Less: Variable Cost (1.5 Million x \$40)	60.00
Contribution before tax	60.00
Tax@35%	21.00
CFAT (1-5 years)	39.00

(c) Additional CFAT attributable to Foreign Investment

	\$ Million
Through setting up subsidiary in India	210.50
Through Exports in India	39.00
CFAT (1-5 years)	171.50

III. Determination of NPV

Year	CFAT (\$ Million)	PVF@12%	PV(\$ Million)
1-5	171.50	3.6048	618.2232
5	35	0.5674	19.8590
			638.0822
Less: Initial Outflow			535.0000
			103.0822

Since NPV is positive the proposal should be accepted.

(b) (a) Calculation of maximum price per share at which PQR Ltd. can offer to pay for XYZ Ltd.'s share

Market Value (10,00,000 x ₹ 24)	₹ 2,40,00,000
Synergy Gain	₹ 80,00,000
Saving of Overpayment	₹ 30,00,000
	₹ 3,50,00,000
Maximum Price (₹ 3,50,00,000/10,00,000)	₹ 35

(b) Calculation of minimum price per share at which the management of XYZ Ltd.'s will be willing to offer their controlling interest

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Value of XYZ Ltd.'s Management Holding (40% of 10,00,000 x ₹ 24)	₹ 96,00,000
Add: PV of loss of remuneration to top management	₹ 30,00,000
	₹ 1,26,00,000
No. of Shares	4,00,000
Minimum Price (₹ 1,26,00,000/4,00,000)	₹ 31.50

**Question 3**

- (a) Based on the following data, estimate the Net Asset Value (NAV) on per unit basis of a Regular Income Scheme of a Mutual Fund:

	₹ (in lakhs)
Listed Equity shares at cost (ex-dividend)	40.00
Cash in hand	2.76
Bonds & Debentures at cost of these, Bonds not listed & not quoted	8.96
Other fixed interest securities at cost	2.50
Dividend accrued	9.75
Amount payable on shares	1.95
Expenditure accrued	13.54
	1.76

Current realizable value of fixed income securities of face value of ₹100 is ₹ 96.50.

Number of Units (₹ 10 face value each): 275000

All the listed equity shares were purchased at a time when market portfolio index was 12,500. On NAV date, the market portfolio index is at 19,975.

There has been a diminution of 15% in unlisted bonds and debentures valuation.

Listed bonds and debentures carry a market value of ₹ 7.5 lakhs, on NAV date.

Operating expenses paid during the year amounted to ₹ 2.24 lakhs. (8 Marks)

- (b) JKL Ltd., an Indian company has an export exposure of JPY 10,000,000 payable August 31, 2014. Japanese Yen (JPY) is not directly quoted against Indian Rupee.

The current spot rates are:

INR/US \$ = ₹ 62.22

JPY/US\$ = JPY 102.34

It is estimated that Japanese Yen will depreciate to 124 level and Indian Rupee to depreciate against US \$ to ₹ 65.

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Forward rates for August 2014 are

INR/US \$ = ₹ 66.50

JPY/US\$ = JPY 110.35

Required:

(i) Calculate the expected loss, if the hedging is not done. How the position will change, if the firm takes forward cover?

(ii) If the spot rates on August 31, 2014 are:

INR/US \$= ₹ 66.25

JPY/US\$ = JPY 110.85

Is the decision to take forward cover justified?

(5 + 3 = 8 Marks)

Answer

(a)

Particulars	Adjustment Value ₹ lakhs
Equity Shares	63.920
Cash in hand	2.760
Bonds and debentures not listed	2.125
Bonds and debentures listed	7.500
Dividends accrued	1.950
Fixed income securities	9.409
Sub total assets (A)	87.664
Less: Liabilities	
Amount payable on shares	13.54
Expenditure accrued	1.76
Sub total liabilities (B)	15.30
Net Assets Value (A) – (B)	72.364
No. of units	2,75,000
Net Assets Value per unit (₹ 72.364 lakhs / 2,75,000)	₹ 26.3142

(b) Since the direct quote for ¥ and ₹ is not available it will be calculated by cross exchange rate as follows:

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₹/\$ x \$/¥ = ₹/¥

62.22/102.34 = 0.6080

Spot rate on date of export 1¥ = ₹ 0.6080

Expected Rate of ¥ for August 2014 = ₹ 0.5242 (₹ 65/¥124)

Forward Rate of ¥ for August 2014 = ₹ 0.6026 (₹ 66.50/¥110.35)

(i) Calculation of expected loss without hedging

Value of export at the time of export (₹ 0.6080 x ¥10,000,000)	₹ 60,80,000
Estimated payment to be received on Aug. 2014 (₹ 0.5242 x ¥10,000,000)	₹ 52,42,000
Loss	₹ 8,38,000

Hedging of loss under Forward Cover

₹ Value of export at the time of export (₹ 0.6080 x ¥10,000,000)	₹ 60,80,000
Payment to be received under Forward Cover (₹ 0.6026 x ¥10,000,000)	₹ 60,26,000
Loss	₹ 54,000

By taking forward cover loss is reduced to ₹ 54,000.

(ii) Actual Rate of ¥ on August 2014 = ₹ 0.5977 (₹ 66.25/¥110.85)

Value of export at the time of export (₹ 0.6080 x ¥10,000,000)	₹ 60,80,000
Estimated payment to be received on Aug. 2014 (₹ 0.5977 x ¥10,000,000)	₹ 59,77,000
Loss	₹ 1,03,000

The decision to take forward cover is still justified.

**Question 4**

(a) RST Ltd.'s current financial year's income statement reported its net income as ₹25,00,000. The applicable corporate income tax rate is 30%.

Following is the capital structure of RST Ltd. at the end of current financial year:

	₹
Debt (Coupon rate = 11%)	40 lakhs
Equity (Share Capital + Reserves & Surplus)	125 lakhs
Invested Capital	165 lakhs

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Following data is given to estimate cost of equity capital:

	₹
Beta of RST Ltd.	1.36
Risk –free rate i.e. current yield on Govt. bonds	8.5%
Average market risk premium (i.e. Excess of return on market portfolio over risk-free rate)	9%

Required:

- (i) Estimate Weighted Average Cost of Capital (WACC) of RST Ltd.; and  
 (ii) Estimate Economic Value Added (EVA) of RST Ltd. (4 + 4 = 8 Marks)
- (b) Following information is given in respect of WXY Ltd., which is expected to grow at a rate of 20% p.a. for the next three years, after which the growth rate will stabilize at 8% p.a. normal level, in perpetuity.

	For the year ended March 31, 2014
Revenues	₹ 7,500 Crores
Cost of Goods Sold (COGS)	₹ 3,000 Crores
Operating Expenses	₹ 2,250 Crores
Capital Expenditure	₹ 750 Crores
Depreciation (included in COGS & Operating Expenses)	₹ 600 Crores

During high growth period, revenues & Earnings before Interest & Tax (EBIT) will grow at 20% p.a. and capital expenditure net of depreciation will grow at 15% p.a. From year 4 onwards, i.e. normal growth period revenues and EBIT will grow at 8% p.a. and incremental capital expenditure will be offset by the depreciation. During both high growth & normal growth period, net working capital requirement will be 25% of revenues.

The Weighted Average Cost of Capital (WACC) of WXY Ltd. is 15%.

Corporate Income Tax rate will be 30%.

Required:

Estimate the value of WXY Ltd. using Free Cash Flows to Firm (FCFF) & WACC methodology.

The PVIF @ 15 % for the three years are as below:

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Year	t <sub>1</sub>	t <sub>2</sub>	t <sub>3</sub>
PVIF	0.8696	0.7561	0.6575

(8 Marks)

Answer

(a) Cost of Equity as per CAPM

$$k_e = R_f + \beta \times \text{Market Risk Premium}$$

$$= 8.5\% + 1.36 \times 9\%$$

$$= 8.5\% + 12.24\% = 20.74\%$$

Cost of Debt  $k_d = 11\%(1 - 0.30) = 7.70\%$

WACC  $(k_o) = k_e \times \frac{E}{E+D} + k_d \times \frac{D}{E+D}$

$$= 20.74 \times \frac{125}{165} + 7.70 \times \frac{40}{165}$$

$$= 15.71 + 1.87 = 17.58\%$$

Taxable Income  $= ₹ 25,00,000 / (1 - 0.30)$

$$= ₹ 35,71,429 \text{ or } ₹ 35.71 \text{ lakhs}$$

Operating Income  $= \text{Taxable Income} + \text{Interest}$

$$= ₹ 35,71,429 + ₹ 4,40,000$$

$$= ₹ 40,11,429 \text{ or } ₹ 40.11 \text{ lacs}$$

EVA  $= \text{EBIT} (1 - \text{Tax Rate}) - \text{WACC} \times \text{Invested Capital}$

$$= ₹ 40,11,429 (1 - 0.30) - 17.58\% \times ₹ 1,65,00,000$$

$$= ₹ 28,08,000 - ₹ 29,00,700 = - ₹ 92,700$$

(b) Determination of forecasted Free Cash Flow of the Firm (FCFF)

(₹ in crores)

	Yr. 1	Yr. 2	Yr 3	Terminal Year
Revenue	9000.00	10800.00	12960.00	13996.80
COGS	3600.00	4320.00	5184.00	5598.72
Operating Expenses	1980.00	2376.00	2851.20	3079.30
Depreciation	720.00	864.00	1036.80	1119.74
EBIT	2700.00	3240.00	3888.00	4199.04

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Tax @30%	810.00	972.00	1166.40	1259.71
EAT	1890.00	2268.00	2721.60	2939.33
Capital Exp. – Dep.	172.50	198.38	228.13	-
Δ Working Capital	375.00	450.00	540.00	259.20
Free Cash Flow (FCF)	1342.50	1619.62	1953.47	2680.13

Present Value (PV) of FCFF during the explicit forecast period is:

FCFF (₹ in crores)	PVF @ 15%	PV (₹ in crores)
1342.50	0.8696	1167.44
1619.62	0.7561	1224.59
1953.47	0.6575	1284.41
		<b>3676.44</b>

PV of the terminal, value is:

$$\frac{2680.13}{0.15 - 0.08} \times \frac{1}{(1.15)^3} = ₹ 38287.57 \text{ Crore} \times 0.6575 = ₹ 25174.08 \text{ Crore}$$

The value of the firm is :

$$₹ 3676.44 \text{ Crores} + ₹ 25174.08 \text{ Crores} = ₹ 28,850.52 \text{ Crores}$$

**Question 5**

- (a) *The credit sales and receivables of DEF Ltd. at the end of year are estimated at ₹ 561 lakhs and ₹ 69 lakhs respectively.*

*The average variable overdraft interest rate is 5% p.a.*

*DEF Ltd. is considering a factoring proposal for its receivables on a non-recourse basis at an annual fee of 1.25% of credit sales.*

*As a result, DEF Ltd. will save ₹ 1.5 lakhs p.a. in administrative cost and ₹ 5.25 lakhs p.a. as bad debts.*

*The factor will maintain a receivables collection period of 30 days and will provide 80% of receivables as advance at an interest rate of 7% p.a. You may take 365 days in a year for the purpose of calculation of receivables.*

*Required:*

*Evaluate the viability of factoring proposal.*

*(8 Marks)*

- (b) *On January 28, 2013 an importer customer requested a Bank to remit Singapore Dollar (SGD) 2,500,000 under an irrevocable Letter of Credit (LC). However, due to unavoidable*

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factors, the Bank could effect the remittances only on February 4, 2013. The inter-bank market rates were as follows:

	January 28, 2013	February 4, 2013
US\$ 1=	₹ 45.85/45.90	₹ 45.91/45.97
GBP £ 1=	US\$ 1.7840/1.7850	US\$ 1.7765/1.7775
GBP £ 1=	SGD 3.1575/3.1590	SGD 3.1380/3.1390

The Bank wishes to retain an exchange margin of 0.125%

Required:

How much does the customer stand to gain or lose due to the delay?

(Note: Calculate the rate in multiples of 0.0001)

(8 Marks)

Answer

(a)

Particulars	₹
Estimated Receivables	69,00,000
Estimated Receivables under Factor $\left( 5,61,00,000 \times \frac{30}{365} \right)$	46,10,959
Reduction in Receivables (₹ 69,00,000 – ₹ 46,10,959)	22,89,041

Total Savings (A)

Reduction in finance costs ₹ 22,89,041 @ 5%	1,14,452
Saving of Administration costs	1,50,000
Saving of Bad debts	5,25,000
<b>Total</b>	<b>7,89,452</b>

Total Cost of Factoring (B)

Interest on advances by Factor		
Advances 46,10,959 @ 80%	₹ 36,88,767	
Interest on ₹ 36,88,767 @ 7%	₹ 2,58,214	
Overdraft Interest rate 5%	<u>(₹ 1,84,438)</u>	73,776
Charges payable to Factor (₹ 5,61,00,000 @ 1.25%)		7,01,250
<b>Total</b>		<b><u>7,75,026</u></b>

Net Saving (A) – (B) 14,426

Since Net Saving is positive the proposal is viable and can be accepted.

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- (b) On January 28, 2013 the importer customer requested to remit SGD 25 lakhs.

To consider sell rate for the bank:

US \$	=	₹ 45.90
Pound 1	=	US\$ 1.7850
Pound 1	=	SGD 3.1575
Therefore, SGD 1	=	$\frac{₹ 45.90 * 1.7850}{SGD 3.1575}$
SGD 1	=	₹ 25.9482
Add: Exchange margin (0.125%)		<u>₹ 0.0324</u>
		<u>₹ 25.9806</u>

On February 4, 2013 the rates are

US \$	=	₹ 45.97
Pound 1	=	US\$ 1.7775
Pound 1	=	SGD 3.1380
Therefore, SGD 1	=	$\frac{₹ 45.97 * 1.7775}{SGD 3.1380}$
SGD 1	=	₹ 26.0394
Add: Exchange margin (0.125%)		<u>₹ 0.0325</u>
		<u>₹ 26.0719</u>

Hence, loss to the importer

$$= \text{SGD } 25,00,000 (\text{₹ } 26.0719 - \text{₹ } 25.9806) = \text{₹ } 2,28,250$$

#### Question 6

- (a) GHI Ltd., AAA rated company has issued, fully convertible bonds on the following terms, a year ago:

Face value of bond	₹ 1000
Coupon (interest rate)	8.5%
Time to Maturity (remaining)	3 years
Interest Payment	Annual, at the end of year
Principal Repayment	At the end of bond maturity
Conversion ratio (Number of shares per bond)	25
Current market price per share	₹ 45
Market price of convertible bond	₹ 1175

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AAA rated company can issue plain vanilla bonds without conversion option at an interest rate of 9.5%.

Required: Calculate as of today:

- (i) Straight Value of bond.
- (ii) Conversion Value of the bond.
- (iii) Conversion Premium.
- (iv) Percentage of downside risk.
- (v) Conversion Parity Price.

<i>t</i>	1	2	3
$PVIF_{0.095, t}$	0.9132	0.8340	0.7617

(4 + 1+1+1++1= 8 Marks)

- (b) GKL Ltd. is considering installment sale of LCD TV as a sales promotion strategy.

In a deal of LCD TV, with selling price of ₹ 50,000, a customer can purchase it for cash down payment of ₹ 10,000 and balance amount by adopting any of the following options:

Tenure of Monthly installments	Equated Monthly installment
12	₹ 3800
24	₹ 2140

Required:

Estimate the flat and effective rate of interest for each alternative.

$$PVIFA_{2.05\%, 12} = 10.5429$$

$$PVIFA_{2.10\%, 12} = 10.5107$$

$$PVIFA_{2.10\%, 24} = 18.7014$$

$$PVIFA_{2.12\%, 24} = 18.6593$$

(4 Marks)

- (c) Explain in brief the contents of a Project Report.

(4 Marks)

**Answer**

- (a) (i) Straight Value of Bond

$$₹ 85 \times 0.9132 + ₹ 85 \times 0.8340 + ₹ 1085 \times 0.7617 = ₹ 974.96$$

- (ii) Conversion Value

$$\text{Conversion Ration} \times \text{Market Price of Equity Share}$$

$$= ₹ 45 \times 25 = ₹ 1,125$$

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(iii) Conversion Premium

$$\begin{aligned} \text{Conversion Premium} &= \text{Market Conversion Price} - \text{Market Price of Equity Share} \\ &= \frac{\text{₹ } 1,175}{25} - \text{₹ } 45 = \text{₹ } 2 \end{aligned}$$

(iv) Percentage of Downside Risk

$$= \frac{\text{₹ } 1,175 - \text{₹ } 974.96}{\text{₹ } 974.96} \times 100 = 20.52\%$$

(v) Conversion Parity Price

$$\begin{aligned} &\frac{\text{Bond Price}}{\text{No. of Share on Conversion}} \\ &= \frac{\text{₹ } 1,175}{25} = \text{₹ } 47 \end{aligned}$$

(b)

	12 Months	24 Months
1. Total Annual Charges for Loan	₹ 3,800 X 12 – ₹ 40,000 = ₹ 5,600	(₹ 2,140 X 24 – ₹ 40,000) / 2 = ₹ 5,680
2. Flat Rate of Interest (F)	$\frac{\text{₹ } 5,600}{\text{₹ } 40,000} \times 100 = 14\%$	$\frac{\text{₹ } 5,680}{\text{₹ } 40,000} \times 100 = 14.20\%$
3. Effective Interest Rate	$\frac{n}{n+1} \times 2F = \frac{12}{13} \times 28 = 25.85\%$	$\frac{n}{n+1} \times 2F = \frac{24}{25} \times 28.40 = 27.26\%$

(c) The following aspects need to be taken into account for a Project Report -

1. *Promoters:* Their experience, past records of performance form the key to their selection for the project under study.
2. *Industry Analysis:* The environment outside and within the country is vital for determining the type of project one should opt for.
3. *Economic Analysis:* The demand and supply position of a particular type of product under consideration, competitor's share of the market along with their marketing strategies, export potential of the product, consumer preferences are matters requiring proper attention in such type of analysis.
4. *Cost of Project:* Cost of land, site development, buildings, plant and machinery, utilities e.g. power, fuel, water, vehicles, technical know how together with working

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- capital margins, preliminary/pre-operative expenses, provision for contingencies determine the total value of the project.
5. *Inputs:* Availability of raw materials within and outside the home country, reliability of suppliers cost escalations, transportation charges, manpower requirements together with effluent disposal mechanisms are points to be noted.
  6. *Technical Analysis:* Technical know-how, plant layout, production process, installed and operating capacity of plant and machinery form the core of such analysis.
  7. *Financial Analysis:* Estimates of production costs, revenue, tax liabilities profitability and sensitivity of profits to different elements of costs and revenue, financial position and cash flows, working capital requirements, return on investment, promoters contribution together with debt and equity financing are items which need to be looked into for financial viability.
  8. *Social Cost Benefit Analysis:* Ecological matters, value additions, technology absorptions, level of import substitution form the basis of such analysis.
  9. *SWOT Analysis:* Liquidity/Fund constraints in capital market, limit of resources available with promoters, business/financial risks, micro/macro economic considerations subject to government restrictions, role of Banks/Financial Institutions in project assistance, cost of equity and debt capital in the financial plan for the project are factors which require careful examinations while carrying out SWOT analysis.
  10. *Project Implementation Schedule:* Date of commencement, duration of the project, trial runs, cushion for cost and time over runs and date of completion of the project through Network Analysis have all to be properly adhered to in order to make the project feasible.

#### Question 7

Write short notes on any **four** of the following:

- (a) *Traditional & Walter Approach to Dividend Policy*
- (b) *Factors affecting value of an option*
- (c) *Forward Rate Agreements*
- (d) *American Depository Receipts*
- (e) *Balancing Financial Goals vis-a-vis Sustainable Growth* (4 x 4 = 16 Marks)

#### Answer

- (a) According to the traditional position expounded by Graham and Dodd, the stock market places considerably more weight on dividends than on retained earnings. For them, the stock market is overwhelmingly in favour of liberal dividends as against niggardly dividends. Their view is expressed quantitatively in the following valuation model:

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$$P = m (D + E/3)$$

Where,

P = Market Price per share

D = Dividend per share

E = Earnings per share

m = a Multiplier.

As per this model, in the valuation of shares the weight attached to dividends is equal to four times the weight attached to retained earnings. In the model prescribed, E is replaced by (D+R) so that

$$P = m \{D + (D+R)/3\}$$

$$= m (4D/3) + m (R/3)$$

The weights provided by Graham and Dodd are based on their subjective judgments and not derived from objective empirical analysis. Notwithstanding the subjectivity of these weights, the major contention of the traditional position is that a liberal payout policy has a favourable impact on stock prices.

The formula given by Prof. James E. Walter shows how dividend can be used to maximise the wealth position of equity holders. He argues that in the long run, share prices reflect only the present value of expected dividends. Retentions influence stock prices only through their effect on further dividends. It can envisage different possible market prices in different situations and considers internal rate of return, market capitalisation rate and dividend payout ratio in the determination of market value of shares.

Walter Model focuses on two factors which influences Market Price

- (i) Dividend Per Share.
- (ii) Relationship between Internal Rate of Return (IRR) on retained earnings and market expectations (cost of capital).

If  $IRR > \text{Cost of Capital}$ , Share price can be even higher in spite of low dividend. The relationship between dividend and share price on the basis of Walter's formula is shown below:

$$V_c = \frac{D + \frac{R_a}{R_c} (E-D)}{R_c}$$

Where,

$V_c$  = Market value of the ordinary shares of the company

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$R_a$  = Return on internal retention, i.e., the rate company earns on retained profits

$R_c$  = Cost of Capital

$E$  = Earnings per share

$D$  = Dividend per share.

- (b) There are a number of different mathematical formulae, or models, that are designed to compute the fair value of an option. You simply input all the variables (stock price, time, interest rates, dividends and future volatility), and you get an answer that tells you what an option should be worth. Here are the general effects the variables have on an option's price:

(a) *Price of the Underlying:* The value of calls and puts are affected by changes in the underlying stock price in a relatively straightforward manner. When the stock price goes up, calls should gain in value and puts should decrease. Put options should increase in value and calls should drop as the stock price falls.

(b) *Time:* The option's future expiry, at which time it may become worthless, is an important and key factor of every option strategy. Ultimately, time can determine whether your option trading decisions are profitable. To make money in options over the long term, you need to understand the impact of time on stock and option positions.

With stocks, time is a trader's ally as the stocks of quality companies tend to rise over long periods of time. But time is the enemy of the options buyer. If days pass without any significant change in the stock price, there is a decline in the value of the option. Also, the value of an option declines more rapidly as the option approaches the expiration day. That is good news for the option seller, who tries to benefit from time decay, especially during that final month when it occurs most rapidly.

(c) *Volatility:* The beginning point of understanding volatility is a measure called statistical (sometimes called historical) volatility, or SV for short. SV is a statistical measure of the past price movements of the stock; it tells you how volatile the stock has actually been over a given period of time.

(d) *Interest Rate-* Another feature which affects the value of an Option is the time value of money. The greater the interest rates, the present value of the future exercise price is less.

- (c) A Forward Rate Agreement (FRA) is an agreement between two parties through which a borrower/ lender protects itself from the unfavourable changes to the interest rate. Unlike futures FRAs are not traded on an exchange thus are called OTC product.

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Following are main features of FRA.

- ◆ Normally it is used by banks to fix interest costs on anticipated future deposits or interest revenues on variable-rate loans indexed to LIBOR.
- ◆ It is an off Balance Sheet instrument.
- ◆ It does not involve any transfer of principal. The principal amount of the agreement is termed "notional" because, while it determines the amount of the payment, actual exchange of the principal never takes place.
- ◆ It is settled at maturity in cash representing the profit or loss. A bank that sells an FRA agrees to pay the buyer the increased interest cost on some "notional" principal amount if some specified maturity of LIBOR is above a stipulated "forward rate" on the contract maturity or settlement date. Conversely, the buyer agrees to pay the seller any decrease in interest cost if market interest rates fall below the forward rate.
- ◆ Final settlement of the amounts owed by the parties to an FRA is determined by the formula

$$\text{Payment} = \frac{(N)(RR - FR)(dtm/DY)}{[1 + RR(dt/DY)]} \times 100$$

Where,

- N = the notional principal amount of the agreement;
- RR = Reference Rate for the maturity specified by the contract prevailing on the contract settlement date; typically LIBOR or MIBOR
- FR = Agreed-upon Forward Rate; and
- dtm = maturity of the forward rate, specified in days (FRA Days)
- DY = Day count basis applicable to money market transactions which could be 360 or 365 days.

If LIBOR > FR the seller owes the payment to the buyer, and if LIBOR < FR the buyer owes the seller the absolute value of the payment amount determined by the above formula.

- ◆ The differential amount is discounted at post change (actual) interest rate as it is settled in the beginning of the period not at the end.

Thus, buying an FRA is comparable to selling, or going short, a Eurodollar or LIBOR futures contract.

- (d) **American Depository Receipts (ADRs):** A depository receipt is basically a negotiable certificate denominated in US dollars that represent a non- US Company's publicly traded local currency (INR) equity shares/securities. While the term refer to them is global

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depository receipts however, when such receipts are issued outside the US, but issued for trading in the US they are called ADRs.

An ADR is generally created by depositing the securities of an Indian company with a custodian bank. In arrangement with the custodian bank, a depository in the US issues the ADRs. The ADR subscriber/holder in the US is entitled to trade the ADR and generally enjoy rights as owner of the underlying Indian security. ADRs with special/unique features have been developed over a period of time and the practice of issuing ADRs by Indian Companies is catching up.

Only such Indian companies that can stake a claim for international recognition can avail the opportunity to issue ADRs. The listing requirements in US and the US GAAP requirements are fairly severe and will have to be adhered. However if such conditions are met ADR becomes an excellent sources of capital bringing in foreign exchange.

These are depository receipts issued by a company in USA and are governed by the provisions of Securities and Exchange Commission of USA. As the regulations are severe, Indian companies tap the American market through private debt placement of GDRs listed in London and Luxemburg stock exchanges.

Apart from legal impediments, ADRs are costlier than Global Depository Receipts (GDRs). Legal fees are considerably high for US listing. Registration fee in USA is also substantial. Hence, ADRs are less popular than GDRs.

- (e) The concept of sustainable growth can be helpful for planning healthy corporate growth. This concept forces managers to consider the financial consequences of sales increases and to set sales growth goals that are consistent with the operating and financial policies of the firm. Often, a conflict can arise if growth objectives are not consistent with the value of the organization's sustainable growth. Question concerning right distribution of resources may take a difficult shape if we take into consideration the rightness not for the current stakeholders but for the future stakeholders also. To take an illustration, let us refer to fuel industry where resources are limited in quantity and a judicious use of resources is needed to cater to the need of the future customers along with the need of the present customers. One may have noticed the save fuel campaign, a demarketing campaign that deviates from the usual approach of sales growth strategy and preaches for conservation of fuel for their use across generation. This is an example of stable growth strategy adopted by the oil industry as a whole under resource constraints and the long run objective of survival over years. Incremental growth strategy, profit strategy and pause strategy are other variants of stable growth strategy.

Sustainable growth is important to enterprise long-term development. Too fast or too slow growth will go against enterprise growth and development, so financial should play important role in enterprise development, adopt suitable financial policy initiative to make sure enterprise growth speed close to sustainable growth ratio and have sustainable healthy development.

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The sustainable growth rate (SGR), concept by Robert C. Higgins, of a firm is the maximum rate of growth in sales that can be achieved, given the firm's profitability, asset utilization, and desired dividend payout and debt (financial leverage) ratios. The sustainable growth rate is a measure of how much a firm can grow without borrowing more money. After the firm has passed this rate, it must borrow funds from another source to facilitate growth. Variables typically include the net profit margin on new and existing revenues; the asset turnover ratio, which is the ratio of sales revenues to total assets; the assets to beginning of period equity ratio; and the retention rate, which is defined as the fraction of earnings retained in the business.

$SGR = ROE \times (1 - \text{Dividend payment ratio})$

Sustainable growth models assume that the business wants to: 1) maintain a target capital structure without issuing new equity; 2) maintain a target dividend payment ratio; and 3) increase sales as rapidly as market conditions allow. Since the asset to beginning of period equity ratio is constant and the firm's only source of new equity is retained earnings, sales and assets cannot grow any faster than the retained earnings plus the additional debt that the retained earnings can support. The sustainable growth rate is consistent with the observed evidence that most corporations are reluctant to issue new equity. If, however, the firm is willing to issue additional equity, there is in principle no financial constraint on its growth rate.

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