The suggested answers are published for the purpose of assisting students in their understanding of the possible principles, analysis or arguments that may be identified in each question.
1. Win World Limited (WWL), a private limited company, has been established in Hong Kong since 1980. It has been a wholly equity financed company since its commencement of business. Its main business is production of mini-motors for various industrial sectors. Ho’s family holds a 75% controlling interest while Man’s family holds the remaining 25% interest in the company. Zain Ho, York Ho, Xenia Ho and Wilson Man are the directors of WWL. In the last board meeting, the directors approved the proposal to list WWL on the Hong Kong stock market in the near future. They all thought that the listing would have a positive effect on the company’s market value. The current earnings before interest and taxes are $80 million. The directors all expected that this earnings level could be constant in the foreseeable future. The dividend policy adopted by WWL is simple: that all distributable profit be paid out as dividends at the year end.

Vinson, the company’s Financial Consultant, has estimated that the average asset beta of WWL is about 1.5. The business risk of WWL is similar to the industry as a whole. The expected market return and the return on riskless assets are 15% and 12% respectively. Both rates are expected to keep constant for the foreseeable future and are after-tax in nature.

Vinson does not think that the existing capital structure will be able to cope with the future expansion. Ho’s family has proposed modifying the capital structure hoping that the new capital structure would enhance the company’s values. As a result, WWL is considering introducing some debt into its capital structure. Vinson has suggested two options for the directors to consider. The first one is a 10% debenture at par secured by WWL’s non-current assets amounting to $100 million. The second one is an unsecured 12% loan stock at par of amount $200 million. However, based on Wilson Man’s personal business experience, the introduction of debts into WWL’s capital structure would increase the risk of WWL and may make WWL face severe financial difficulties in the future. Wilson will therefore object to this in the next meeting.

WWL has also completed its long-term investment plan. Two expansion projects, Project A and Project B, are under discussion. Project A is the larger in scale and involves setting up production plants in Thailand and Vietnam. Project B is much smaller in scale and involves entering into a joint venture agreement with a factory in Cambodia. The initial investment outlay and expected annual net cash flow for 20 years are as follows:

<table>
<thead>
<tr>
<th>Project</th>
<th>Investment cost ( $’ million)</th>
<th>Annual net cash flow ( $’ million )</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>27</td>
<td>5</td>
</tr>
<tr>
<td>B</td>
<td>7.8</td>
<td>1.8</td>
</tr>
</tbody>
</table>
All the cash flows are expected to occur at the year end. The cut-off payback period has been agreed as five years.

Under the current Hong Kong tax law, the profits tax rate on corporations is 16.5%. Finance charges on debts are tax deductible. WWL has enjoyed positive retained earnings for more than 30 years.

REQUIRED:

1. (a) Compare the issuing of secured 10% debentures and the unsecured 12% loan stock by WWL by:
   (i) total market values;
   (ii) equity values;
   (iii) debt to equity ratio and
   (iv) cost of equity.

Ans (a) (i) Using CAPM

Cost of equity
= risk free rate + (market rate - risk free rate) × β
= 12% + (15% - 12%) × 1.5 = 16.5%

Using dividend valuation model
It is assumed that all earnings are distributed as dividends which do not grow.
Market value before gearing
= earnings before interest and taxes × (1 − tax rate) ÷ cost of equity
= dividends ÷ cost of equity
= $80m × (1 − 16.5%) ÷ 16.5% = $404.85m

<table>
<thead>
<tr>
<th></th>
<th>Current (ungeared)</th>
<th>10% debenture</th>
<th>12% loan stock</th>
</tr>
</thead>
<tbody>
<tr>
<td>Profit before interest and tax</td>
<td>$80.00</td>
<td>$80.00</td>
<td>$80.00</td>
</tr>
<tr>
<td>Less: finance charge</td>
<td>0</td>
<td>10.00</td>
<td>24.00</td>
</tr>
<tr>
<td></td>
<td>80.00</td>
<td>70.00</td>
<td>56.00</td>
</tr>
<tr>
<td>Less: profits tax (16.5%)</td>
<td>13.20</td>
<td>11.55</td>
<td>9.24</td>
</tr>
<tr>
<td>Profit for distribution</td>
<td>66.80</td>
<td>58.45</td>
<td>46.76</td>
</tr>
<tr>
<td></td>
<td>Current (ung geared)</td>
<td>10% debenture</td>
<td>12% loan stock</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>---------------------</td>
<td>---------------</td>
<td>---------------</td>
</tr>
<tr>
<td>Market value before gearing</td>
<td>404.85</td>
<td>404.85</td>
<td>404.85</td>
</tr>
<tr>
<td>Value of debt</td>
<td>0</td>
<td>100.00</td>
<td>200.00</td>
</tr>
<tr>
<td>Profits tax rate</td>
<td>16.5%</td>
<td>16.5%</td>
<td>16.5%</td>
</tr>
<tr>
<td>Tax shield</td>
<td>0</td>
<td>16.50</td>
<td>33.00</td>
</tr>
<tr>
<td><strong>Market value after gearing</strong></td>
<td><strong>404.85</strong></td>
<td><strong>421.35</strong></td>
<td><strong>437.85</strong></td>
</tr>
</tbody>
</table>

(ii)

Market value after gearing = Equity value + debt value
Equity value = Market value after gearing – debt value

**Secured 10% debenture**

**Equity value = $421.35m - $100m = $321.35m**

**Unsecured 12% loan stock**

**Equity value = $437.85m - $200m = $237.85m**

(iii)

**Secured 10% debenture**

Debt to equity ratio = $100m ÷ $321.35m = 31.12%

**Unsecured 12% loan stock**

Debt to equity ratio = $200m ÷ $237.85m = 84.09%

(iv)

**Secured 10% debenture**

Cost of equity = $58.45m ÷ $321.35m = 18.19%

**Unsecured 12% loan stock**

Cost of equity = $46.76m ÷ $237.85m = 19.66%

*** Other relevant methods are also acceptable.
1. (b) Wilson does not agree with the argument held by Ho’s family regarding the relationship between the capital structure and the company value.

**Briefly discuss the practical factors which may be taken into account when WWL determines its capital structure.**

**Ans (b)** The idea that capital structure is irrelevant to company value was first put forward by Modigliani and Miller. However, this may not be the case in practice and other factors may be also need to be taken into account.

1. Corporate profits tax may distort the theory. It causes debt financing to be better than equity financing because of the tax deductible nature of finance charges.

2. The nature of the asset base may affect the method of financing. It is easier to finance a company with high-quality tangible assets as security by debt.

3. Dilution of ownership and control of the company may be a concern for management. Therefore, management may prefer to use debt financing rather than equity financing.

4. It is more difficult for a start-up company to make use of debt financing because it has not enough information for the lender to consider.

5. Financial viability and loan repayment ability may affect the ability of the company to borrow money from financial institutions.

6. Fluctuations in the interest rate may reduce the company’s willingness to use debt financing.

7. The lender may use certain accounting, investing and financing ratios to assess the financial stability of the borrower before making a decision to lend. Thus, the company’s financial ratios may affect its ability to borrow.

8. The risk from foreign exchange exposure may reduce multi-national companies’ willingness to use debt financing in other countries.

9. The memorandum and articles may include clauses which limit the company’s borrowing ability.
1. (c) Wilson is preparing information to object the proposal to be made by Ho’s family in the next meeting. He will remind the other shareholders about the problems that WWL may face if it experiences a period of severe financial difficulties.

**Suggest what Wilson should mention in the next meeting.**

**Ans (c)** Wilson should point out the problems that WWL may face in the case of severe financial difficulties in the next meeting. The problems are mainly caused by a lack of cash flow.

1. It is difficult to meet large cash payments when they are due.
2. Suppliers will be stricter in providing credit.
3. Banks may start to exercise stricter control on the overdraft level, loan repayments, etc.
4. Finance charges will increase.
5. Detailed financial statements and other documents may need to be submitted to the lender regularly.
6. Money will not be available for some non-operating expenses such as training and research and development, etc.
7. Additional transaction costs such as legal costs may be incurred because the risk is higher than before.
8. Staff morale will be affected negatively. This may also affect operational performance.
9. The risk of bankruptcy will increase.
10. It hinders company’s growth.

*** Other relevant methods are also acceptable. ***

1. (d) **At the initial stage, if the two projects are independent, evaluate the feasibility of Project A and Project B.**

**Ans (d)** Using payback method

<table>
<thead>
<tr>
<th></th>
<th>Payback</th>
<th>Result</th>
</tr>
</thead>
</table>
| Project A | $27 m ÷ $5 m  
            | = 5.4 years     | Ignore (> 5 years) |
| Project B | $7.8 m ÷ $1.8 m  
            | = 4.3 years     | Accept (< 5 years) |
1. (e) By using the net present value (NPV) method and internal rate of return (IRR) method, which project(s) should be accepted if they are independent? What if they are mutually exclusive?

Ans (e) From (i)

Cost of equity = 16.5%

Using NPV

<table>
<thead>
<tr>
<th>Project</th>
<th>NPV</th>
<th>Independent</th>
<th>Mutually exclusive</th>
</tr>
</thead>
</table>
| A       | $(\cdot 27 + 5 \times \text{PV-annuity factor of 20 years at 16.5\%}) m$  
\hspace{1cm} = $(\cdot 27 + 5 \times 5.775) m$  
\hspace{1cm} = $1.875 m$ | **Accept (positive)** | Ignore (Lower) |
| B       | $(\cdot 7.8 + 1.8 \times \text{PV-annuity factor of 20 years at 16.5\%}) m$  
\hspace{1cm} = $(\cdot 7.8 + 1.8 \times 5.775) m$  
\hspace{1cm} = $2.595 m$ | **Accept (positive)** | **Accept (Higher)** |

PV-annuity factor of 20 years at 16.5\% = \((1 \cdot (1 + 16.5\%)^{20}) \div 16.5\% \) = 5.775

By IRR

<table>
<thead>
<tr>
<th>Project</th>
<th>NPV</th>
<th>Independent</th>
<th>Mutually exclusive</th>
</tr>
</thead>
</table>
| A       | $(\cdot 27 + 5 \times ((1 \cdot (1 + \text{IRR})^{-20}) \div \text{IRR}) = \text{NPV} = 0$  
\hspace{1cm} By using Trial and Error Method or a financial calculator, the IRR of Project A is 17.82\%.  
\hspace{1cm} Accept (> 16.5\%) | Ignore (Lower) |
| B       | $(\cdot 7.8 + 1.8 \times ((1 \cdot (1 + \text{IRR})^{-20}) \div \text{IRR}) = \text{NPV} = 0$  
\hspace{1cm} By using Trial and Error Method or a financial calculator, the IRR of Project B is 22.69\%.  
\hspace{1cm} Accept (> 16.5\%) | **Accept (Higher)** |

Finally, after the assessment of NPV and IRR together, **Project A and Project B should both be accepted if they are independent** but only **Project B should be accepted if they are mutual exclusive.**
SECTION B

2. May May Trading Limited (MMTL) is a private limited company which trades in specialised sport shoes. MMTL usually sells goods to a wholesaler, Alan Limited (AL) in Australia.

Today, MMTL is selling goods to AL again. The purchase price of SL228 shipment is A$100,000 with payment terms of 120 days. Upon receiving the payment, MMTL will convert the Australian dollars (A$) to Hong Kong dollars (HK$).

The current foreign exchange rate is as follows:

<table>
<thead>
<tr>
<th>Country</th>
<th>Contract</th>
<th>HK$ equivalent</th>
<th>Currency per HK$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australian dollar</td>
<td>Spot</td>
<td>7.931</td>
<td>0.1261</td>
</tr>
<tr>
<td></td>
<td>120-day future</td>
<td>8.002</td>
<td>0.125</td>
</tr>
</tbody>
</table>

REQUIRED:

2. (a) Advise how hedging techniques can be applied by MMTL in order to hedge its foreign exchange risk.

Ans (a) (1) MMTL should contract with a financial institution to hedge the foreign exchange risk by selling Australian dollars forward 120 days.

(2) After 120 days, MMTL will receive A$100,000 from AL.

(3) MMTL can exchange this A$100,000 into HK$800,000 (A$100,000 ÷ A$0.125 /HK$).

(4) A forward contract can be used to hedge risk such as currency or exchange rate risk.

(5) If MMTL does not hedge the foreign exchange risk, it will face exchange risk exposure after 120 days.

(6) Depending on market movements, the value of the Australian dollar may rise or drop a lot after 120 days.

(7) If the value of the Australian dollar drops a lot, then MMTL may suffer an exchange loss from the SL228 shipment.
2. (b) Given the above information, evaluate whether the Australian dollar is at a premium or at a discount.

Ans (b) (1) The Australian dollar is at a premium.
(2) The 120 days forward rate of A$ per HK$ is less than the spot rate.
(3) This means that fewer A$ can be bought for HK$1 in the future.
(4) It also means that using fewer A$ can be exchanged for HK$1 in the future.
(5) The A$ is expected to strengthen from 7.931 to 8.002.

2. (c) What is the implied differential in interest rates between the two countries calculated using the interest rate parity theory? Elaborate on your answer. If the Australian interest rate is 5% per annum, what is the Hong Kong interest rate?

Ans (c) The differential in interest rates

\[ \text{Premium} = \left( \frac{\text{Forward rate} - \text{spot rate}}{\text{spot rate}} \right) \times \left( \frac{12 \text{ months}}{4 \text{ months}} \right) \times 100\% \]

\[ = \frac{(8.002 - 7.931)}{7.931} \times 12 \div 4 \times 100\% \]

\[ = 2.7\% \]

The interest rate parity theory states (IRPT) that the ratio of the forward and spot rates is directly related to the two interest rates. Thus, if the IRPT holds, the Australian interest rate should be 2.7% higher than the Hong Kong interest rate.

\[ \text{Premium} = \left( \text{Interest rate}_{A\$} - \text{Interest rate}_{HK} \right) \]

By applying IRPT, the premium 2.7% = 5% - Interest rate_{HK}

\[ \text{Interest rate}_{HK} = 5\% - 2.7\% \]

\[ = 2.3\% \]
3. Both Top One Limited (TOL) and Supreme Limited (SL) are listed companies. TOL is preparing to expand its business through the acquisition of the shares in SL. If the acquisition is successful, the scale of SL will be reduced by selling off Business A which accounts for $30 million of SL’s latest earnings. The estimated selling price for Business A is $200 million.

With better management introduced in SL after the acquisition, the earnings of SL are estimated to increase by 25% in the foreseeable future. However, TOL does not expect any change to SL’s price earnings ratio as a result of the improvements in earnings. Some of TOL’s properties will be disposed of at an estimated selling price of $320 million due to expected usage after the acquisition. The management of TOL estimates the direct disposal costs of the properties to be $90 million. Market information on TOL and SL before the acquisition is shown below:

<table>
<thead>
<tr>
<th></th>
<th>Number of shares</th>
<th>Share price</th>
<th>Current earnings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top One Limited</td>
<td>300 million</td>
<td>$8.50</td>
<td>$238 million</td>
</tr>
<tr>
<td>Supreme Limited</td>
<td>1,000 million</td>
<td>$1.70</td>
<td>$190 million</td>
</tr>
</tbody>
</table>

REQUIRED:

3. (a) **Evaluate the financial effect on the current share price of TOL and SL if TOL offers a one-for-five shares deal to SL’s shareholders. (Assume that TOL’s estimates are all correct and all other things keep constant.)**

**Ans** (a) SL’s initial earnings after merging (selling off Business A)

\[
= \$190\text{ m} - \$30\text{ m} \\
= \$160\text{ m}
\]

SL’s initial earnings after merging (better management)

\[
= \$160\text{ m} \times (1 + 25%) \\
= \$200\text{ m}
\]

SL’s P/E ratio before merging

\[
= \$1.7 \div (\$190\text{ m} \div 1,000\text{ m}) \\
= 8.95
\]
Therefore, value of SL’s earnings
= $200 m × 8.95
= $1,790 m

Value of the new TOL group
= (300 m × $8.5) + $320 m – $90 m + $200 m + $1,790 m
= $4,770 m

Additional TOL shares to be issued on merging
= 1/5 × 1,000 m shares
= 200 m shares

TOL shares in issue after merging
= 300 m + 200 m
= 500 m shares

Theoretical value of TOL’s share price
= $4,770 m ÷ 500 m shares
= $9.54 per share

The effect on TOL’s share price
= $9.54 - $8.5
= $1.04 (favourable)

Theoretical value of SL’s share price
= 1/5 × $9.54 per share
= $1.908 per share

The effect on SL’s share price
= $1.908 - $1.7
= $0.208 (favourable)
3. (b) If TOL offers SL’s shareholders either a one-for-five share exchange offer or a cash offer, discuss whether the cash offer should be more or less than the current value of the share exchange. (Assume that TOL’s estimates are all correct and all other things keep constant.)

Ans (b) There are both advantages and disadvantages to accepting the cash offer:

(1) Cash has a known value and certainty in value.
(2) Cash can be invested in other risk-free securities to get a safe return.
(3) Acceptors receive the cash offer without paying any transaction costs.
(4) Acceptors cannot benefit from the growth of the share price.
(5) Acceptors cannot have any ownership, control and participation in the new group after receiving the cash offer.

In practice, a cash offer is set lower than the share exchange price because the risk associated with receiving cash is lower than the risk associated with receiving shares.

3. (c) Evaluate the financial effect on the share price of SL if TOL agrees to offer a share exchange by giving a 12% gain on the existing SL share price to existing SL shareholders.

Ans (c) The existing SL share price is $1.7.

A 12% gain means the share price will become $1.7 \times 1.12 = $1.904 per share.

Total value after gain in SL’s value = $1.904 per share \times 1,000 m = $1,904 m

The existing shareholders of SL will own $1,904 m \div $4,770 m \times 100% = 39.92% of the shares in the new group.

The number of new TOL shares to be issued = 39.92 \div (100 - 39.92) \times 300 m or 300 \div (1 - 39.92\%) - 300 = 199.32 m

Therefore, 199.32 million of new TOL shares are issued in exchange for 1,000 m SL shares. The share exchange is 1 new TOL share for 5.0171 old SL shares.
4. Elite International Limited (EIL) is a private limited company in Hong Kong. The following figures are extracted from its statement of financial position.

\[
\begin{array}{l}
\text{Share capital} \\
30,000,000 \text{ ordinary shares of $1 each} & 30,000,000 \\
6,000,000 \text{ 8% preference shares of $0.5 each} & 3,000,000 \\
\text{Reserves} \\
\text{Share premium} & 600,000 \\
\text{Retained earnings} & 6,000,000 \\
& 39,600,000 \\
\text{Non-current liabilities} \\
\text{9% debentures} & 9,000,000 \\
& 48,600,000
\end{array}
\]

The company has paid out the latest dividend on ordinary shares of total $0.20 per share for the whole year. Preference dividends and the interest on debentures have always been paid in full.

The current market price of each ordinary share and preference share are $1.35 and $0.45 respectively; and the 9% debentures stand at 115% of their face value.

EIL’s ordinary share dividend is growing at 3% annually and this is expected to be maintained in the foreseeable future.

REQUIRED:

4. (a) Evaluate the EIL’s weighted average cost of capital (WACC). Discuss how EIL’s management can make use of the WACC.

\[
\text{Ans (a) Cost of ordinary share capital} \\
= \text{Dividend} \div \text{market price of ordinary share} \times 100\% + \text{dividend growth rate} \\
= 0.2 \times (1 + 3\%) \div 1.35 \times 100\% + 3\% \\
= 18.26\%
\]

Cost of preference share capital
\[
= \text{Dividend} \div \text{market price of preference share} \times 100\% \\
= (0.08 \times 0.5) \div 0.45 \times 100\% \\
= 8.89\%
\]
Cost of debt
\[ = \frac{9\%}{115\%} \times 100\% \]
\[ = 7.83\% \]

Market value of the firm
\[ = 30\ m \times \$1.35 + 6\ m \times \$0.45 + 9\ m \times 1.15 \]
\[ = 40.5\ m + 2.7\ m + 10.35\ m \]
\[ = 53.55\ m \]

Weighted average cost of capital
\[ = \left( 18.26\% \times 40.5 + 8.89\% \times 2.7 + 7.83\% \times 10.35 \right) \div 53.55 \]
\[ = 15.77\% \]

Basically, EIL’s assets are financed by either debt or equity financing. Thus, the WACC is the average of the costs of these debt and equity. By taking a weighted average, we can understand how much EIL has to pay for every dollar it finances.

The WACC is the relevant figure to use in an assessment of EIL’s investment projects because of the mixed capital structure of ordinary shares, preference shares and debentures. Therefore, EIL’s management makes use of the WACC in its process of appraising capital projects, monitoring on-going projects and determining the economic feasibility of expansionary opportunities and mergers. The WACC can also serve as the appropriate discount rate to use for cash flow calculations with a similar risk profile to that of the firm overall.

4. (b) Discuss the impact of a change in the capital structure of EIL on its cost of capital.

Ans (b) The overall cost of capital is a weighted average of the cost of different individual components. The change in capital structure may affect the WACC. If debt is cheaper than equity, a change in structure from equity to debt will reduce the overall WACC. Thus, EIL will try to borrow as much as it can in order to reduce the overall WACC.
Another modern idea on capital structure from Modigliani and Miller (MM) states that capital structure is not relevant to the cost of capital. This is only the result of the adjustment of the change in capital structure weights which is offset by change in cost of equity through arbitrage which operates when the capital structure is changed. If the MM theory is accepted in EIL’s case, then a change in capital structure will have no effect on the overall cost of capital.
5. The investment information in relation to the ordinary shares of Toys Kingdom Limited (TKL), a listed company in Hong Kong, for the past seven years is shown as below. Year 7 is the most recent year. The growth in share price and dividend are constant.

<table>
<thead>
<tr>
<th>Year</th>
<th>Average share price (cents)</th>
<th>Dividend per ordinary share (cents)</th>
<th>Dividend cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>240.00</td>
<td>30.00</td>
<td>4.12</td>
</tr>
<tr>
<td>2</td>
<td>252.00</td>
<td>31.50</td>
<td>4.14</td>
</tr>
<tr>
<td>3</td>
<td>264.60</td>
<td>33.08</td>
<td>4.70</td>
</tr>
<tr>
<td>4</td>
<td>277.83</td>
<td>34.73</td>
<td>4.50</td>
</tr>
<tr>
<td>5</td>
<td>291.72</td>
<td>36.47</td>
<td>4.10</td>
</tr>
<tr>
<td>6</td>
<td>306.31</td>
<td>38.29</td>
<td>4.20</td>
</tr>
<tr>
<td>7</td>
<td>321.63</td>
<td>40.20</td>
<td>4.10</td>
</tr>
</tbody>
</table>

TKL has also issued some $100 convertible debentures carrying a coupon rate of 11% per year. Currently, these debentures stand at $80 per $100 of stock. They are convertible into ordinary shares at the rate of 20 shares per $100 stock on a single occasion in three years’ time.

REQUIRED:

5. (a) Evaluate:

(i) the earnings per share;
(ii) the price earnings ratio and;
(iii) the rate of return which is expected by the ordinary shareholders.

Ans (a) (i) Earnings per share

= 40.2 × 4.10

= 164.82 cents

(ii) Price earnings ratio

= 321.63 ÷ 164.82

= 1.9514

(iii) Rate of return expected by the ordinary shareholders = dividend yield + capital growth
Dividend yield
\[ = 40.2 \times (1 + (40.2 - 38.29) \div 38.29) \div 321.63 \times 100\% \]
\[ = 13.12\% \]

Because, share price$_7$ = share price$_1$ \times (1 + capital growth)$^6$
Thus, capital growth = (share price$_7$ \div share price$_1$)$^{1/6}$ \- 1

Capital growth
\[ = (321.63 \div 240)^{1/6} - 1 \]
\[ = 1.050004 - 1 \]
\[ = 0.050004 \]
\[ = 5\% \]

Rate of return expected by the ordinary shareholders
\[ = 13.12\% + 5\% \]
\[ = 18.12\% \]

5. (b) Traditionally, investing by bond is less risky than investing by equity, thus the dividend yields should be higher than bond yields accordingly. However, dividend yields sometimes are less than bond yields in reality.

Discuss this statement.

Ans (b) Investors trade off return and risk when they make financial decisions. Traditionally, investors accept lower bond yields as opposed to higher dividend yields because they are conservative/risk averse. They want to reduce their investment risk. However, dividend yields on a share are not the only measure of investors’ return. Investors also receive capital gains from their share investment. The capital gain can only be realised at disposal. A lower dividend yield implies more reinvestment by the company so that it facilitates future company growth. Therefore, dividend yields are sometimes less than bond yields in reality because the investors would like to receive more total returns in the future.
5. (c) As an investor, discuss on whether investing in TKL via convertible debentures is a better method than investing in equity directly.

**Ans** (c) Running yield of debentures

\[
= 11\% \times \frac{100}{80} \\
= 13.75\%
\]

The debenture yield of 13.75% is lower than the equity yield of 18.12%.

Implied share price of convertible debentures

\[
= \frac{80}{20} \\
= $4.00 per share
\]

The implied share price of convertible debentures of $4 is higher than the market price of $321.63 cents.

Therefore, debentures are not a good investment method as seen by comparing the debenture yield with the implied share price.

However, some investors may think that convertible debentures are a good investment as they offer the opportunity to obtain the potentially large return associated with stock, but with the safety of a bond. Investors can wait and see and make their own choice on converting according to the market condition in three years’ time. Thus, convertible debentures are less risky than equity.
6. Tim and Nick International Limited (TNIL) is a Hong Kong private limited company. It is proposing to increase the credit period to its clients from one month to two months. TNIL expects it can increase sales revenue. The selling price is assumed to stay constant. The existing annual sales revenue is $81 million. The cost structure of TNIL’s product consists of variable cost of $12 and fixed cost apportionment of $4.20 respectively. The profit margin is 10% as a whole.

Any increase in sales revenue will lead to a corresponding increase in inventories. TNIL keeps an inventories level equivalent to one month’s sales revenue. Fixed overheads are not expected to change. It is also assumed no change in creditors. Bad debts are expected to be 4% of the additional sales revenue.

REQUIRED:

6. (a) Evaluate the minimum increase in sales revenue in order to meet the required finance costs. Assume that all existing clients would like to accept the new credit terms and TNIL requires finance costing 18% per year to finance its increase in working capital.

Ans (a) Unit price
\[
= (\$12 + \$4.2) \div (100\% - 10\%)
\]
\[
= \$18
\]

Contribution per unit for each additional unit sold
\[
= \$18 - (\$18 \times 4\%) - \$12
\]
\[
= \$5.28
\]

Let \( q \) be the required minimum increase in sales volume.

Additional contribution from increased sales
\[
= \$5.28q
\]

Inventories
Additional inventories required (one month's sales)
\[
= q \div 12 \times \$18
\]
\[
= \$1.5q
\]
Debtors
Existing debtors (one month of sales)
= \( \frac{1}{12} \times 81 \text{ m} \)
= $6.75 \text{ m}

Additional one month credit will increase existing debtors by \( 1 \times 6.75 \text{ m} = 6.75 \text{ m} \)

Additional debtors (evaluated at selling price)
= \( \frac{2}{12} \times 18q \)
= $3q

Total increase in working capital
= $1.5q + 6.75 \text{ m} + 3q
= $4.5q + 6.75 \text{ m}

At 18% per year, the finance cost per year of the additional working capital
= 18% \times ($4.5q + 6.75 \text{ m})

Therefore, the additional contribution should equal the annual finance cost
5.28q = 18% \times ($4.5q + 6.75 \text{ m})
5.28q = 0.81q + 1.215 \text{ m}
4.47q = 1.215 \text{ m}
q = 271,800 \text{ unit}

The minimum increases in sales volume and sales revenue are 271,800 unit and $4,892,400.
6. (b) One of the senior management of TNIL proposes offering cash discounts to debtors who make their payment before the scheduled due date rather than extending the credit period to debtors.

**Discuss the factors that should be considered and the benefits which may accrue to TNIL if it uses cash discounts to stimulate sales revenue.**

**Ans (b)** Before offering a cash discount, TNIL should assess the level of cash discounts which are currently being offered by competitors in the market and industry. The availability of cash flow, the company’s cash position and any hidden costs should also be evaluated.

Benefits:

1. Increasing the demand for TNIL’s goods and services because the goods and services are effectively cheaper.
2. Improvement in liquidity due to prompt payments from debtors.
3. Reduction of working capital financing costs due to reduction of debtors.
4. Reduction of workload of accounting staff such as for sending reminders, monitoring the bad debt position, etc.
5. Reduction of bad debt level.

*** Other relevant methods are also acceptable.***

END