Instructions to candidates

You are allowed three hours to answer this question paper.

You are allowed 20 minutes reading time before the examination begins during which you should read the question paper and, if you wish, highlight and/or make notes on the question paper. However, you will not be allowed, under any circumstances, to open the answer book and start writing or use your calculator during this reading time.

You are strongly advised to carefully read ALL the question requirements before attempting the question concerned (that is all parts and/or sub-questions). The requirements for all questions are contained in a dotted box.

ALL answers must be written in the answer book. Answers or notes written on the question paper will not be submitted for marking.

Answer ALL compulsory questions in Section A on page 9.

Answer TWO of the three questions in Section B on pages 10 to 16.

Maths Tables are provided on pages 17 to 21.

The list of verbs as published in the syllabus is given for reference on the inside back cover of this question paper.

Write your candidate number, the paper number and examination subject title in the spaces provided on the front of the answer book. Also write your contact ID and name in the space provided in the right hand margin and seal to close.

Tick the appropriate boxes on the front of the answer book to indicate which questions you have answered.
Power Utilities

Pre-seen Case Study

Background
Power Utilities (PU) is located in a democratic Asian country. Just over 12 months ago, the former nationalised Electricity Generating Corporation (EGC) was privatised and became PU. EGC was established as a nationalised industry many years ago. Its home government at that time had determined that the provision of the utility services of electricity generation production should be managed by boards that were accountable directly to Government. In theory, nationalised industries should be run efficiently, on behalf of the public, without the need to provide any form of risk related return to the funding providers. In other words, EGC, along with other nationalised industries was a non-profit making organisation. This, the Government claimed at the time, would enable prices charged to the final consumer to be kept low.

Privatisation of EGC
The Prime Minister first announced three years ago that the Government intended to pursue the privatisation of the nationalised industries within the country. The first priority was to be the privatisation of the power generating utilities and EGC was selected as the first nationalised industry to be privatised. The main purpose of this strategy was to encourage public subscription for share capital. In addition, the Government's intention was that PU should take a full and active part in commercial activities such as raising capital and earning higher revenue by increasing its share of the power generation and supply market by achieving growth either organically or through making acquisitions. This, of course, also meant that PU was exposed to commercial pressures itself, including satisfying the requirements of shareholders and becoming a potential target for take-over. The major shareholder, with a 51% share, would be the Government. However, the Minister of Energy has recently stated that the Government intends to reduce its shareholding in PU over time after the privatisation takes place.

Industry structure
PU operates 12 coal-fired power stations across the country and transmits electricity through an integrated national grid system which it manages and controls. It is organised into three regions, Northern, Eastern and Western. Each region generates electricity which is sold to 10 private sector electricity distribution companies which are PU's customers.

The three PU regions transmit the electricity they generate into the national grid system. A shortage of electricity generation in one region can be made up by taking from the national grid. This is particularly important when there is a national emergency, such as exceptional weather conditions.

The nationalised utility industries, including the former EGC, were set up in a monopolistic position. As such, no other providers of these particular services were permitted to enter the market within the country. Therefore, when EGC was privatised and became PU it remained the sole generator of electricity in the country. The electricity generating facilities, in the form of the 12 coal-fired power stations, were all built over 15 years ago and some date back to before EGC came into being.

The 10 private sector distribution companies are the suppliers of electricity to final users including households and industry within the country, and are not under the management or control of PU. They are completely independent companies owned by shareholders.

The 10 private sector distribution companies serve a variety of users of electricity. Some, such as AB, mainly serve domestic users whereas others, such as DP, only supply electricity to a few industrial clients. In fact, DP has a limited portfolio of industrial customers and 3 major clients, an industrial conglomerate, a local administrative authority and a supermarket chain. DP finds these clients costly to service.
Structure of PU

The structure of PU is that it has a Board of Directors headed by an independent Chairman and a separate Managing Director. The Chairman of PU was nominated by the Government at the time the announcement that EGC was to be privatised was made. His background is that he is a former Chairman of an industrial conglomerate within the country. There was no previous Chairman of EGC which was managed by a Management Board, headed by the Managing Director. The former EGC Managing Director retired on privatisation and a new Managing Director was appointed.

The structure of PU comprises a hierarchy of many levels of management authority. In addition to the Chairman and Managing Director, the Board consists of the Directors of each of the Northern, Eastern and Western regions, a Technical Director, the Company Secretary and the Finance Director. All of these except the Chairman are the Executive Directors of PU. The Government also appointed seven Non-Executive Directors to PU’s Board. With the exception of the Company Secretary and Finance Director, all the Executive Directors are qualified electrical engineers. The Chairman and Managing Director of PU have worked hard to overcome some of the inertia which was an attitude that some staff had developed within the former EGC. PU is now operating efficiently as a private sector company. There have been many staff changes at a middle management level within the organisation.

Within the structure of PU's headquarters, there are five support functions; engineering, finance (which includes PU's Internal Audit department), corporate treasury, human resource management (HRM) and administration, each with its own chief officers, apart from HRM. Two Senior HRM Officers and Chief Administrative Officer report to the Company Secretary. The Chief Accountant and Corporate Treasurer each report to the Finance Director. These functions, except Internal Audit, are replicated in each region, each with its own regional officers and support staff. Internal Audit is an organisation wide function and is based at PU headquarters.

Regional Directors of EGC

The Regional Directors all studied in the field of electrical engineering at the country's leading university and have worked together for a long time. Although they did not all attend the university at the same time, they have a strong belief in the quality of their education. After graduation from university, each of the Regional Directors started work at EGC in a junior capacity and then subsequently gained professional electrical engineering qualifications. They believe that the experience of working up through the ranks of EGC has enabled them to have a clear understanding of EGC's culture and the technical aspects of the industry as a whole. Each of the Regional Managers has recognised the changed environment that PU now operates within, compared with the former EGC, and they are now working hard to help PU achieve success as a private sector electricity generator. The Regional Directors are well regarded by both the Chairman and Managing Director, both in terms of their technical skill and managerial competence.

Governance of EGC

Previously, the Managing Director of the Management Board of EGC reported to senior civil servants in the Ministry of Energy. There were no shareholders and ownership of the Corporation rested entirely with the Government. That has now changed. The Government holds 51% of the shares in PU and the Board of Directors is responsible to the shareholders but, inevitably, the Chairman has close links directly with the Minister of Energy, who represents the major shareholder.

The Board meetings are held regularly, normally weekly, and are properly conducted with full minutes being taken. In addition, there is a Remuneration Committee, an Audit Committee and an Appointments Committee, all in accordance with best practice. The model which has been used is the Combined Code on Corporate Governance which applies to companies which have full listing status on the London Stock Exchange. Although PU is not listed on the London Stock Exchange, the principles of the Combined Code were considered by the Government to be appropriate to be applied with regard to the corporate governance of the company.

Currently, PU does not have an effective Executive Information System and this has recently been raised at a Board meeting by one of the non-executive directors because he believes...
this inhibits the function of the Board and consequently is disadvantageous to the governance of PU.

**Remuneration of Executive Directors**

In order to provide a financial incentive, the Remuneration Committee of PU has agreed that the Executive Directors be entitled to performance related pay, based on a bonus scheme, in addition to their fixed salary and health benefits.

**Capital market**

PU exists in a country which has a well developed capital market relating both to equity and loan stock funding. There are well established international institutions which are able to provide funds and corporate entities are free to issue their own loan stock in accordance with internationally recognised principles. PU is listed on the country’s main stock exchange.

**Strategic opportunity**

The Board of PU is considering the possibility of vertical integration into electricity supply and has begun preliminary discussion with DP’s Chairman with a view to making an offer for DP. PU’s Board is attracted by DP’s strong reputation for customer service but is aware, through press comment, that DP has received an increase in complaints regarding its service to customers over the last year. When the former EGC was a nationalised business, break-downs were categorised by the Government as “urgent”, when there was a danger to life, and “non-urgent” which was all others. Both the former EGC and DP had a very high success rate in meeting the government’s requirements that a service engineer should attend the urgent break-down within 60 minutes. DP’s record over this last year in attending urgent break-downs has deteriorated seriously and if PU takes DP over, this situation would need to improve.

**Energy consumption within the country and Government drive for increased efficiency and concern for the environment**

Energy consumption has doubled in the country over the last 10 years. As PU continues to use coal-fired power stations, it now consumes most of the coal mined within the country.

The Minister of Energy has indicated to the Chairman of PU that the Government wishes to encourage more efficient methods of energy production. This includes the need to reduce production costs. The Government has limited resources for capital investment in energy production and wishes to be sure that future energy production facilities are more efficient and effective than at present.

The Minister of Energy has also expressed the Government’s wish to see a reduction in harmful emissions from the country’s power stations. (The term harmful emissions in this context, refers to pollution coming out of electricity generating power stations which damage the environment.)

One of PU’s non-executive directors is aware that another Asian country is a market leader in coal gasification which is a fuel technology that could be used to replace coal for power generation. In the coal gasification process, coal is mixed with oxygen and water vapour under pressure, normally underground, and then pumped to the surface where the gas can be used in power stations. The process significantly reduces carbon dioxide emissions although it is not widely used at present and not on any significant commercial scale.

Another alternative to coal fired power stations being actively considered by PU’s Board is the construction of a dam to generate hydro-electric power. The Board is mindful of the likely adverse response of the public living and working in the area where the dam would be built.

In response to the Government’s wishes, PU has established environmental objectives relating to improved efficiency in energy production and reducing harmful emissions such as greenhouse gases. PU has also established an ethical code. Included within the code are sections relating to recycling and reduction in harmful emissions as well as to terms and conditions of employment.
Introduction of commercial accounting practices at EGC
The first financial statements have been produced for PU for 2008. Extracts from the Statement of Financial Position from this are shown in Appendix A. Within these financial statements, some of EGC's loans were "notionally" converted by the Government into ordinary shares. Interest is payable on the Government loans as shown in the statement of financial position. Reserves is a sum which was vested in EGC when it was first nationalised. This represents the initial capital stock valued on a historical cost basis from the former electricity generating organisations which became consolidated into EGC when it was first nationalised.

Being previously a nationalised industry and effectively this being the first "commercially based" financial statements, there are no retained earnings brought forward into 2008.
APPENDIX A

EXTRACTS FROM THE PRO FORMA FINANCIAL STATEMENTS OF THE ELECTRICITY GENERATING CORPORATION

Statement of financial position as at 31 December 2008

\[
\begin{array}{l|l}
\text{P$ million} & \\
\hline
\text{ASSETS} & \\
\text{Non-current assets} & 15,837 \\
\text{Current assets} & \\
\text{Inventories} & 1,529 \\
\text{Receivables} & 2,679 \\
\text{Cash and Cash equivalents} & 133 \\
\hline
\text{Total assets} & 20,178 \\
\hline
\text{EQUITY AND LIABILITIES} & \\
\text{Equity} & \\
\text{Share capital} & 5,525 \\
\text{Reserves} & 1,231 \\
\hline
\text{Total equity} & 6,756 \\
\text{Non-current liabilities} & \\
\text{Government loans} & 9,560 \\
\hline
\text{Current liabilities} & \\
\text{Payables} & 3,862 \\
\hline
\text{Total liabilities} & 13,422 \\
\text{Total equity and liabilities} & 20,178 \\
\end{array}
\]

End of Pre-seen Material
Question One

Unseen material for Case Study

Background

Assume today is 20 May 2009.

Power Utilities (PU) is located in an Asian country. It is planning to diversify its business activities by moving away from total reliance on coal fired power stations and building a hydroelectric power station to produce electricity using natural resources. A dam would need to be constructed to create a reservoir of water above the dam. Electricity would be generated by releasing water from the upper reservoir through the dam. Modern hydroelectric power stations can be very responsive to consumer demand and it is expected that the power station would be able to generate up to 100 megawatts of electricity within 60 seconds of the need arising.

Hydroelectric power stations do not directly produce harmful emissions such as carbon dioxide. However, some carbon dioxide will be produced during the construction phase. There is also a potential source of harmful greenhouse gases in the form of methane gas from decaying plant matter in flooded areas.

Public opinion on the project has been very mixed and there is a significant risk of opposition to the project from local people. Their housing and farming businesses will be seriously affected by the proposed development which will require flooding of local land to construct the dam.

Corporate objectives

Corporate objectives in line with a recent government drive include:

- Improved efficiency of energy production;
- Reduction in harmful emissions such as greenhouse gases.

Financial objectives include maintaining group gearing (debt:debt plus equity) below 40% based on market values.

Hydroelectric power station project

Initial research has shown that a major river in the south of the country may be suitable for use in this project.

Extensive engineering and environmental studies have already begun to assess the viability of the project. These are expected to cost US$15,000,000 in total, payable in three equal instalments at the end of the calendar years 2008, 2009 and 2010. The payment for 2008 has already been made. PU is committed to pay the 2009 instalment but a clause in the contract would enable it to cancel the payment due in 2010 if it decides to withdraw from the project and future viability studies before the end of 2009.

Construction costs will be payable in US$. Other project costs and all project revenue will be in PU’s functional currency, P$.
Construction and operating cash flows for the project are as follows:

<table>
<thead>
<tr>
<th>Year(s)</th>
<th>US$ million</th>
<th>P$ million</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction costs</td>
<td>3 and 4</td>
<td>60 payment each year</td>
</tr>
<tr>
<td>Pre-tax net operating cash flows</td>
<td>5 to 24</td>
<td>-</td>
</tr>
</tbody>
</table>

**Additional information:**

- Time 0 is 1 January 2010;
- Cash flows should be assumed to arise at the end of each year;
- Business tax is 30% and is payable a year in arrears; also note that the government has announced plans to reduce the tax rate to 10% from 1 January 2014 on “clean” energy schemes such as this one (and would therefore only affect the tax position of the operating cash flows); however, this still needs to be approved by parliament and there is a risk that approval will not be obtained;
- Tax depreciation allowances of 100% can be claimed on construction costs but no tax relief is available on the cost of the engineering and environmental studies;
- The assets of the project have no residual value;
- Exchange rate as at today, 20 May 2009, is US$/P$6.3958 (that is, US$1 = P$6.3958). Some economic forecasters expect this exchange rate to remain constant over the period of the project but other forecasts predict that the US$ will strengthen against the P$ by 5% each year;
- PU normally uses a cost of capital net of tax of 10% to assess investments of this type.

**Financial information for PU**

Extracts from the latest available financial statements for PU are provided in the pre-seen material. The ordinary share capital consists of P$1 shares and the current share price on 20 May 2009 is P$2.80. The long term government borrowings shown in the statement of financial position are floating rate loans and the amount borrowed is unchanged since 31 December 2008

**Financing the project**

Two alternative financing schemes are being considered which would each raise the equivalent of US$130 million on 1 January 2012. These are:

(i) A five-year P$ loan at a fixed interest rate of 5% per annum;

(ii) A subsidised loan denominated in US$ from an international organisation that promotes “clean energy” schemes. There would not be any interest payments but US$145 million would be repayable at the end of the five year term.

*The requirement for Question One is on page 9*
Required:

(a) Calculate the NPV of the project as at 1 January 2010 for each of the two different exchange rate forecasts and the two tax rates.

(14 marks)

(b) Write a report to the Directors of PU in which you, as Finance Director, address each of the following issues:

(i) Explain your results in part (a) and explain and evaluate other relevant factors that need to be taken into account when deciding whether or not to undertake the project. Conclude by advising PU how to proceed;

(15 marks)

(ii) Explain and evaluate the costs and risks arising from the use of foreign currency borrowings as proposed by financing scheme (ii) and advise PU on the most appropriate financing structure for the project. Up to 7 marks are available for calculations;

(11 marks)

In the event, the Board of Directors of PU decided to go ahead with the project and it has now been operational for six years. The Board has, however, now decided to dispose of the hydroelectric power station. To assist with these plans, a new entity, PP, has been formed and the plant and its operations have been transferred to PP.

(c) Discuss why PU might wish to dispose of the hydroelectric power station and advise the Directors of PU on alternative methods for achieving the divestment.

(10 marks)

(Total for Question One = 50 marks)
Question Two

AB is a large retailing organisation with revenue in the last financial year exceeding €1 billion. Its head office is in a country in the euro zone and its shares are listed on a major European stock exchange. Over the last few years AB has opened several new stores in a number of European capital cities, not all of them in the euro zone. AB is planning to allow all of its stores to accept the world’s major currencies as cash payment for its goods and this will require a major upgrade of its points of sale (POS) system to handle multiple currencies and increased volumes of transactions.

AB has already carried out a replacement investment appraisal exercise and has evaluated appropriate systems. It is now in the process of placing an order with a large information technology entity for the supply, installation and maintenance of a new POS system. The acquisition of the system will include the provision of hardware and software. Routine servicing and software upgrading will be arranged separately and does not affect the investment appraisal decision.

AB is considering the following alternative methods of acquiring and financing the new POS system:

**Alternative 1**
- Pay the whole capital cost of €25 million on 1 January 2010, funded by bank borrowings. This cost includes the initial installation of the POS system.
- The system will have no resale value outside AB

**Alternative 2**
- Enter into a finance lease with the system supplier. AB will pay a fixed amount of €7.0 million each year in advance, commencing 1 January 2010, for four years.
- At the end of four years, ownership of the system will pass to AB without further payment.

**Other information**
- AB can borrow for a period of four years at a pre-tax fixed interest rate of 7% a year. The entity’s cost of equity is currently 12%.
- AB is liable to corporate tax at a marginal rate of 30% which is settled at the end of the year in which it arises.
- AB accounts for depreciation on a straight-line basis at the end of each year
- Under Alternative 1, tax depreciation allowances on the full capital cost are available in equal instalments over the first four years of operation.
- Under Alternative 2, both the accounting depreciation and the interest element of the finance lease payments are tax deductible.
- Once a decision on the payment method has been made and the new system is installed, AB will commission a post completion audit (PCA).

*The requirement for Question Two is on the opposite page*
Required:

(a) 

(i) Calculate which payment method is expected to be cheaper for AB and recommend which should be chosen based solely on the present value of the two alternatives as at 1 January 2010

(10 marks)

(ii) Explain the reasons for your choice of discount factor in the present value calculations.

(3 marks)

(iii) Discuss other factors that AB should consider before deciding on the method of financing the acquisition of the system

(3 marks)

(Total for part (a) 16 marks)

(b) Advise the Directors of AB on the following:

• The main purpose and content of a post completion audit (PCA).
• The limitations of a PCA to AB in the context of the POS system.

(9 marks)

(Total for Question Two = 25 marks)

NOTE: A REPORT FORMAT IS NOT REQUIRED IN THIS QUESTION
Question Three

CD is a privately-owned entity based in Country X, which is a popular holiday destination. Its principal business is the manufacture and sale of a wide variety of items for the tourist market, mainly souvenirs, gifts and beachwear. CD manufactures approximately 80% of the goods it sells. The remaining 20% is purchased from other countries in a number of different currencies. CD owns and operates 5 retail stores in Country X but also sells its products on a wholesale basis to other local retail outlets.

Although CD is privately owned, it has revenue and assets equivalent in amount to some entities that are listed on smaller stock markets (such as the UK’s Alternative Investment Market (AIM)). It is controlled by family shareholders but also has a number of non-family shareholders, such as employees and trade associates. It has no intention of seeking a listing at the present time although some of the family shareholders have often expressed a wish to buy out the smaller investors.

CD has been largely unaffected by the recent world recession and has increased its sales volume and profits each year for the past 5 years. The directors think this is because it provides value for money; providing high quality goods that are competitively priced at the lower end of its market. Future growth is expected to be modest as the directors and shareholders do not wish to adopt strategies that they think might involve substantial increase in risks, for example by moving the manufacturing base to another country where labour rates are lower. Some of the smaller shareholders disagree with this strategy and would prefer higher growth even if it involves greater risk.

The entity is financed 80% by equity and 20% by debt (based on book values). The debt is a mixture of bonds secured on assets and unsecured overdraft. The interest rate on the secured bonds is fixed at 7% and the overdraft rate is currently 8%, which compares to a relatively recent historic rate as high as 13%. The bonds are due to be repaid in 5 years’ time. Inflation in CD’s country is near zero at the present time and interest rates are expected to fall.

CD’s treasury department is centralised at the head office and its key responsibilities include arranging sufficient long and short term financing for the group and hedging foreign exchange exposures. The Treasurer is investigating the opportunities for and consequences of refinancing.

CD’s sole financial objective is to increase dividends each year. It has no non-financial objective. This financial objective and the lack of non-financial objectives are shortly to be subject to review and discussion by the board. The new Finance Director believes maximisation of shareholder wealth should be the sole objective, but the other directors do not agree and think that new objectives should be considered, including target profit after tax and return on investment.

The requirement for Question Three is on the opposite page
Required:

(a) Discuss the role of the treasury department when determining financing or re-financing strategies in the context of the economic environment described in the scenario and explain how these might impact on the determination of corporate objectives.

(15 marks)

(b) Evaluate the appropriateness of CD’s current objective and of the two new objectives being considered. Discuss alternative objectives that might be appropriate for CD and conclude with a recommendation.

(10 marks)

(Total 25 marks)
Question Four

EF is a distributor for branded beverages throughout the world. It is based in the UK but has offices throughout Europe, South America and the Caribbean. Its shares are listed on the UK’s Alternative Investment Market (AIM) and are currently quoted at 180 pence per share.

Extracts from EF’s forecast financial statements are given below.

**Extracts from the (forecast) income statement for the year ended 31 December 2009**

<table>
<thead>
<tr>
<th>Description</th>
<th>£'000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue</td>
<td>45,000</td>
</tr>
<tr>
<td>Purchase costs and expenses</td>
<td>38,250</td>
</tr>
<tr>
<td>Interest on long term debt</td>
<td>450</td>
</tr>
<tr>
<td>Profit before tax</td>
<td>6,300</td>
</tr>
<tr>
<td>Income tax expense (at 28%)</td>
<td>1,764</td>
</tr>
<tr>
<td>Note: Dividends declared</td>
<td>1,814</td>
</tr>
</tbody>
</table>

**EF - Statement of financial position as at 31 December 2009**

<table>
<thead>
<tr>
<th>Description</th>
<th>£'000</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ASSETS</strong></td>
<td></td>
</tr>
<tr>
<td>Non-current assets</td>
<td>14,731</td>
</tr>
<tr>
<td>Current assets</td>
<td></td>
</tr>
<tr>
<td>Inventories</td>
<td>5,250</td>
</tr>
<tr>
<td>Trade receivables</td>
<td>13,500</td>
</tr>
<tr>
<td>Cash and bank balances</td>
<td>348</td>
</tr>
<tr>
<td><strong>Total assets</strong></td>
<td>19,098</td>
</tr>
<tr>
<td><strong>EQUITY AND LIABILITIES</strong></td>
<td></td>
</tr>
<tr>
<td>Equity</td>
<td></td>
</tr>
<tr>
<td>Share capital (ordinary shares of 25 pence)</td>
<td>4,204</td>
</tr>
<tr>
<td>Retained earnings</td>
<td>16,210</td>
</tr>
<tr>
<td><strong>Total equity</strong></td>
<td>20,414</td>
</tr>
<tr>
<td>Non-current liabilities</td>
<td></td>
</tr>
<tr>
<td>(Secured bonds, 9% 2015)</td>
<td>5,000</td>
</tr>
<tr>
<td><strong>Current liabilities</strong></td>
<td></td>
</tr>
<tr>
<td>Trade payables</td>
<td>8,415</td>
</tr>
<tr>
<td><strong>Total liabilities</strong></td>
<td>13,415</td>
</tr>
<tr>
<td><strong>Total equity and liabilities</strong></td>
<td>33,829</td>
</tr>
</tbody>
</table>
You have obtained the following additional information:

1. Revenue and purchases & expenses are expected to increase by an average of 4% each year for the financial years ending 31 December 2010 and 2011.

2. EF expects to continue to be liable for tax at the rate of 28 per cent. Assume tax is paid or refunded the year in which the liability arises.

3. The ratios of trade receivables to sales and trade payables to purchase costs and expenses will remain the same for the next two years. The value of inventories is likely to remain at 2009 levels for 2010 and 2011.

4. The non-current assets in the statement of financial position at 31 December 2009 are land and buildings, which are not depreciated in the company’s books. Tax depreciation allowances on the buildings may be ignored. All other assets used by the company are currently procured on operating leases.

5. The company intends to purchase early in 2010 a fleet of vehicles (trucks and vans). These vehicles are additional to the vehicles currently operated by EF. The vehicles will be provided to all its UK and overseas bases but will be purchased in the UK. The cost of these vehicles will be £5,000,000. The cost will be depreciated on a straight line basis over 10 years. The company charges a full year’s depreciation in the first year of purchase of its assets. Tax depreciation allowances are available at 25% reducing balance on this expenditure. Assume the vehicles have a zero residual value at the end of ten years.

6. Dividends will be increased by 5% each year on the 2009 base. Assume they are paid in the year they are declared.

EF plans to finance the purchase of the vehicles (identified in note 6) from its cash balances and an overdraft. The entity’s agreed overdraft facility is currently £1 million.

The company’s main financial objectives are to earn a post-tax return on the closing book value of shareholders’ funds of 20% per annum and a year on year increase in earnings of 8%

Assumption regarding overdraft interest

It should be assumed that overdraft interest that might have been incurred during 2009 is included in expenses (that is, you are not expected to calculate overdraft interest for 2010 and 2011).

The requirement for Question Four is on the next page
Required:

Assume you are a consultant working for EF

(a) Construct a forecast income statement, including dividends and retentions for the years ended 31 December 2010 and 2011.

(6 marks)

(b) Construct a cash flow forecast for each of the years 2010 and 2011. Discuss, briefly, how the company might finance any cash deficit.

(9 marks)

(c) Using your results in (a) and (b) above, evaluate whether EF is likely to meet its stated objectives. As part of your evaluation, discuss whether the assumption regarding overdraft interest is reasonable and explain how a more accurate calculation of overdraft interest could be obtained.

(10 marks)

(Total for Question Four = 25 marks)

End of Question Paper

Maths Tables and Formulae are on Pages 17 - 21
Present value table

Present value of 1.00 unit of currency, that is \((1 + r)^{-n}\) where \(r\) = interest rate; \(n\) = number of periods until payment or receipt.

<table>
<thead>
<tr>
<th>Periods ((n))</th>
<th>Interest rates ((r))</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1%</td>
</tr>
<tr>
<td>1</td>
<td>0.990</td>
</tr>
<tr>
<td>2</td>
<td>0.980</td>
</tr>
<tr>
<td>3</td>
<td>0.971</td>
</tr>
<tr>
<td>4</td>
<td>0.961</td>
</tr>
<tr>
<td>5</td>
<td>0.951</td>
</tr>
<tr>
<td>6</td>
<td>0.942</td>
</tr>
<tr>
<td>7</td>
<td>0.933</td>
</tr>
<tr>
<td>8</td>
<td>0.923</td>
</tr>
<tr>
<td>9</td>
<td>0.914</td>
</tr>
<tr>
<td>10</td>
<td>0.905</td>
</tr>
<tr>
<td>11</td>
<td>0.896</td>
</tr>
<tr>
<td>12</td>
<td>0.887</td>
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<tr>
<td>13</td>
<td>0.879</td>
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<tr>
<td>14</td>
<td>0.870</td>
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<tr>
<td>15</td>
<td>0.861</td>
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<tr>
<td>16</td>
<td>0.853</td>
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<tr>
<td>17</td>
<td>0.844</td>
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<tr>
<td>18</td>
<td>0.836</td>
</tr>
<tr>
<td>19</td>
<td>0.828</td>
</tr>
<tr>
<td>20</td>
<td>0.820</td>
</tr>
</tbody>
</table>
Cumulative present value of 1.00 unit of currency per annum

Receivable or Payable at the end of each year for $n$ years

\[ \frac{1 - (1 + r)^{-n}}{r} \]

<table>
<thead>
<tr>
<th>Periods (n)</th>
<th>Interest rates (r)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1% 2% 3% 4% 5% 6% 7% 8% 9% 10%</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>0.990 0.980 0.971 0.962 0.952 0.943 0.935 0.926 0.917 0.909</td>
</tr>
<tr>
<td>2</td>
<td>1.970 1.942 1.913 1.886 1.859 1.833 1.808 1.783 1.759 1.736</td>
</tr>
<tr>
<td>3</td>
<td>2.941 2.864 2.829 2.775 2.723 2.673 2.624 2.577 2.531 2.487</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Periods (n)</th>
<th>Interest rates (r)</th>
</tr>
</thead>
<tbody>
<tr>
<td>11% 12% 13% 14% 15% 16% 17% 18% 19% 20%</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>0.901 0.893 0.885 0.877 0.870 0.862 0.855 0.847 0.840 0.833</td>
</tr>
<tr>
<td>2</td>
<td>1.713 1.690 1.668 1.647 1.626 1.605 1.585 1.566 1.547 1.528</td>
</tr>
<tr>
<td>3</td>
<td>2.444 2.402 2.361 2.323 2.282 2.246 2.210 2.174 2.140 2.106</td>
</tr>
<tr>
<td>4</td>
<td>3.102 3.037 2.974 2.914 2.855 2.798 2.743 2.690 2.639 2.589</td>
</tr>
<tr>
<td>11</td>
<td>6.207 5.938 5.687 5.453 5.234 5.029 4.836 4.656 4.486 4.327</td>
</tr>
<tr>
<td>17</td>
<td>7.549 7.120 6.729 6.373 6.047 5.749 5.475 5.222 4.990 4.775</td>
</tr>
</tbody>
</table>
Formulae

Valuation models

(i) Irredeemable preference shares, paying a constant annual dividend, \( d \), in perpetuity, where \( P_0 \) is the ex-div value:

\[
P_0 = \frac{d}{k_{\text{pref}}}\]

(ii) Ordinary (equity) shares, paying a constant annual dividend, \( d \), in perpetuity, where \( P_0 \) is the ex-div value:

\[
P_0 = \frac{d}{k_e}\]

(iii) Ordinary (equity) shares, paying an annual dividend, \( d \), growing in perpetuity at a constant rate, \( g \), where \( P_0 \) is the ex-div value:

\[
P_0 = \frac{d}{k_e - g} \quad \text{or} \quad P_0 = \frac{d[1 + g]}{k_e - g}\]

(iv) Irredeemable bonds, paying annual after-tax interest, \( i[1 - t] \), in perpetuity, where \( P_0 \) is the ex-interest value:

\[
P_0 = \frac{i[1 - t]}{k_{\text{dnet}}}\]

or, without tax:

\[
P_0 = \frac{i}{k_d}\]

(v) Total value of the geared entity, \( V_g \) (based on MM):

\[
V_g = V_0 + TB\]

(vi) Future value of \( S \), of a sum \( X \), invested for \( n \) periods, compounded at \( r\% \) interest:

\[
S = X[1 + r]^n\]

(vii) Present value of 1-00 payable or receivable in \( n \) years, discounted at \( r\% \) per annum:

\[
PV = \frac{1}{(1 + r)^n}\]

(viii) Present value of an annuity of 1-00 per annum, receivable or payable for \( n \) years, commencing in one year, discounted at \( r\% \) per annum:

\[
PV = \frac{1}{r} \left[ 1 - \frac{1}{(1 + r)^n} \right]\]

(ix) Present value of 1-00 per annum, payable or receivable in perpetuity, commencing in one year, discounted at \( r\% \) per annum:

\[
PV = \frac{1}{r}\]

(x) Present value of 1-00 per annum, receivable or payable, commencing in one year, growing in perpetuity at a constant rate of \( g\% \) per annum, discounted at \( r\% \) per annum:

\[
PV = \frac{1}{r - g}\]
Cost of capital

(i) Cost of irredeemable preference shares, paying an annual dividend, $d$, in perpetuity, and having a current ex-div price $P_0$:

$$k_{\text{pref}} = \frac{d}{P_0}$$

(ii) Cost of irredeemable bonds, paying annual net interest, $i [1 - t]$, and having a current ex-interest price $P_0$:

$$k_{\text{d,net}} = \frac{i [1 - t]}{P_0}$$

(iii) Cost of ordinary (equity) shares, paying an annual dividend, $d$, in perpetuity, and having a current ex-div price $P_0$:

$$k_e = \frac{d}{P_0}$$

(iv) Cost of ordinary (equity) shares, having a current ex-div price, $P_0$, having just paid a dividend, $d_0$, with the dividend growing in perpetuity by a constant $g\%$ per annum:

$$k_e = \frac{d_0 [1 + g]}{P_0} + g$$

(v) Cost of ordinary (equity) shares, using the CAPM:

$$k_e = R_f + [R_m - R_f] \beta$$

(vi) Cost of ordinary (equity) share capital in a geared entity:

$$k_{\text{eq}} = k_{\text{eu}} + [k_{\text{eu}} - k_d] \frac{V_o [1 - t]}{V_e}$$

(vii) Weighted average cost of capital, $k_0$ or WACC

$$WACC = k_e \left[ \frac{V_e}{V_e + V_o} \right] + k_d \frac{V_o [1 - t]}{V_e + V_o}$$

(viii) Adjusted cost of capital (MM formula):

$$K_{\text{adj}} = k_{\text{eu}} [1 - tL] \quad \text{or} \quad r^* = r [1 - T^* L]$$

(ix) Ungear $\beta$:

$$\beta_u = \beta_3 \left[ \frac{V_e}{V_e + V_o [1 - t]} \right] + \beta_d \left[ \frac{V_o [1 - t]}{V_e + V_o [1 - t]} \right]$$

(x) Regear $\beta$:

$$\beta_g = \beta_u + [\beta_u - \beta_d] \frac{V_o [1 - t]}{V_e}$$

(xi) Adjusted discount rate to use in international capital budgeting (International Fisher effect)

$$\frac{1 + \text{annual discount rate BS}}{1 + \text{annual discount rate AS}} = \frac{\text{Future spot rate AS/BS in 12 months' time}}{\text{Spot rate AS/BS}}$$

where AS/BS is the number of BS to each A$
Other formulae

(i) Expectations theory:

\[
\text{Future spot rate } A$/B$ = \text{Spot rate } A$/B$ \times \frac{1 + \text{nominal countryB interest rate}}{1 + \text{nominal countryA interest rate}}
\]

where:

- $A$/B$ is the number of B$ to each A$,
- A$ is the currency of country A and B$ is the currency of country B.

(ii) Purchasing power parity (law of one price):

\[
\text{Future spot rate } A$/B$ = \text{Spot rate } A$/B$ \times \frac{1 + \text{countryB inflation rate}}{1 + \text{countryA inflation rate}}
\]

(iii) Link between nominal (money) and real interest rates:

\[
[1 + \text{nominal (money) rate}] = [1 + \text{real interest rate}][1 + \text{inflation rate}]
\]

(iv) Equivalent annual cost:

\[
\text{Equivalent annual cost} = \frac{PV \text{ of costs over } n \text{ years}}{n \text{ year annuity factor}}
\]

(v) Theoretical ex-rights price:

\[
\text{TERP} = \frac{1}{N + 1} \left[ (N \times \text{cum rights price}) + \text{issue price} \right]
\]

(vi) Value of a right:

\[
\text{Theoretical ex rights price} - \text{issue price} \times \frac{1}{N}
\]

where $N =$ number of rights required to buy one share.
# LIST OF VERBS USED IN THE QUESTION REQUIREMENTS

A list of the learning objectives and verbs that appear in the syllabus and in the question requirements for each question in this paper.

It is important that you answer the question according to the definition of the verb.

<table>
<thead>
<tr>
<th>LEARNING OBJECTIVE</th>
<th>VERBS USED</th>
<th>DEFINITION</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Level 1 - KNOWLEDGE</strong></td>
<td>List Make a list of</td>
<td></td>
</tr>
<tr>
<td>What you are expected to know.</td>
<td>State Express, fully or clearly, the details or facts of</td>
<td></td>
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<tr>
<td></td>
<td>Define Give the exact meaning of</td>
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<tr>
<td><strong>Level 2 - COMPREHENSION</strong></td>
<td>Describe Communicate the key features</td>
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<tr>
<td>What you are expected to understand.</td>
<td>Distinguish Highlight the differences between</td>
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<tr>
<td></td>
<td>Explain Make clear or intelligible/State the meaning or purpose of</td>
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<td></td>
<td>Identify Recognise, establish or select after consideration</td>
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<td></td>
<td>Illustrate Use an example to describe or explain something</td>
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<tr>
<td><strong>Level 3 - APPLICATION</strong></td>
<td>Apply Put to practical use</td>
<td></td>
</tr>
<tr>
<td>How you are expected to apply your knowledge.</td>
<td>Calculate/compute To ascertain or reckon mathematically</td>
<td></td>
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<tr>
<td></td>
<td>Demonstrate Prove with certainty or to exhibit by practical means</td>
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<td></td>
<td>Prepare Make or get ready for use</td>
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<td></td>
<td>Reconcile Make or prove consistent/compatible</td>
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<tr>
<td></td>
<td>Solve Find an answer to</td>
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<td></td>
<td>Tabulate Arrange in a table</td>
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<tr>
<td><strong>Level 4 - ANALYSIS</strong></td>
<td>Analyse Examine in detail the structure of</td>
<td></td>
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<tr>
<td>How are you expected to analyse the detail of what you have learned.</td>
<td>Categorise Place into a defined class or division</td>
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<tr>
<td></td>
<td>Compare and contrast Show the similarities and/or differences between</td>
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<td></td>
<td>Construct Build up or compile</td>
<td></td>
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<td></td>
<td>Discuss Examine in detail by argument</td>
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<td></td>
<td>Interpret Translate into intelligible or familiar terms</td>
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<td></td>
<td>Prioritise Place in order of priority or sequence for action</td>
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<td></td>
<td>Produce Create or bring into existence</td>
<td></td>
</tr>
<tr>
<td><strong>Level 5 - EVALUATION</strong></td>
<td>Advise Counsel, inform or notify</td>
<td></td>
</tr>
<tr>
<td>How are you expected to use your learning to evaluate, make decisions or recommendations.</td>
<td>Evaluate Appraise or assess the value of</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Recommend Propose a course of action</td>
<td></td>
</tr>
</tbody>
</table>
Financial Pillar

Strategic Level Paper

F3 – Financial Strategy

Specimen Paper

Thursday Morning Session