Answers
Section A

1 A By definition

2 A Relevant cost 500 ($4 + $6) + 500 x $3 = $6,500
   Distracters
   B Contribution lost is not included 500 x $4 + 500 x $3 = $3,500
   C Labour cost is not included 500 x $6 + 500 x $3 = $4,500
   D Variable overheads are ignored 500 x ($4 + $6) = 5,000

3 C By definition

4 B By definition

5 A Contribution per unit = ($20,000 – $8,000)/10,000 = $1.2
   Units to make a profit of $8,000 = ($7,000 + $8,000)/$1.2 = 12,500
   Distracters
   B ($7,000 + $8,000)/($5,000/10,000) = 30,000 incorrectly dividing by profit per unit
   C $8,000/($5,000/10,000) = 16,000 dividing the required profit by the budgeted profit per unit
   D $7,000/$1.2 = 5,833 i.e. calculate the break-even point

6 D By definition

7 A Using contribution per labour hour
   Distracters
   B Using contribution per unit
   C Using profit per unit
   D Using sales price

<table>
<thead>
<tr>
<th>Product</th>
<th>W</th>
<th>X</th>
<th>Y</th>
<th>Z</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales price per unit</td>
<td>$25</td>
<td>$35</td>
<td>$40</td>
<td>$50</td>
</tr>
<tr>
<td>Material cost per unit</td>
<td>$4</td>
<td>$5</td>
<td>$8</td>
<td>$10</td>
</tr>
<tr>
<td>Labour cost per unit at $2 per hour</td>
<td>$6</td>
<td>$10</td>
<td>$10</td>
<td>$20</td>
</tr>
<tr>
<td>Variable overhead cost per unit</td>
<td>$4</td>
<td>$4</td>
<td>$8</td>
<td>$10</td>
</tr>
<tr>
<td>Fixed cost per unit</td>
<td>$10</td>
<td>$12</td>
<td>$2</td>
<td>$6</td>
</tr>
<tr>
<td>Profit per unit</td>
<td>$1</td>
<td>$4</td>
<td>$12</td>
<td>$4</td>
</tr>
<tr>
<td>Contribution per unit</td>
<td>$11</td>
<td>$16</td>
<td>$14</td>
<td>$10</td>
</tr>
<tr>
<td>Labour hours</td>
<td>3</td>
<td>5</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>Contribution per labour hour</td>
<td>$3.67</td>
<td>$3.2</td>
<td>$2.8</td>
<td>$1</td>
</tr>
</tbody>
</table>

8 C The safety inventory = reorder level – average usage x average lead time
   Where the reorder level is calculated as maximum usage x maximum lead time
   = 90 x 10 – 60 x 8 = 420
   Distracters
   A Average usage
   B Maximum usage
   D 90 x 8 – 60 x 10 = 120 i.e. confusing maximum and average usage in the formula

9 B By definition
Interest yield = \( \frac{8}{104} = 7.7\% \)

Distractors
B  Treasury Stock percentage
C  \( \frac{8\%}{2 \text{ years}} = 4\% \) being the Treasury Stock percentage divided by the number of years to redemption
D  \( \frac{4\%}{104} = 3.8\% \) being the answer from C divided by the market value

Section B
1 (a) Cash budget

<table>
<thead>
<tr>
<th>April</th>
<th>May</th>
<th>June</th>
</tr>
</thead>
<tbody>
<tr>
<td>$ 000's</td>
<td>$ 000's</td>
<td>$ 000's</td>
</tr>
</tbody>
</table>

**Receipts**
- From companies: 43 49 43
- From individuals: 14 10 13

Total receipts: 57 59 56

**Payments**
- materials: 28 19 25
- pigments: 6 8 5
- labour and production overheads: 26 16 24
- rent and rates (12/4): 3

Total payments: 63 43 54

**Net cash flow**
- (6) 16 2

**Opening balance b/fwd**
- (5) (11) 5

**Closing balance c/fwd**
- (11) 5 7

**Workings**

**Receipts from debtors**
- Sales to national companies: 44 45 58 34 53
- 50% in the month following sale: 23 29 17
- 45% two months after sale: 20 20 26

Total receipts from companies: 43 49 43

**Payments**
- Total sales
- Production cost 90%
- labour and overheads 40% (Paid in the month incurred)
- materials 60%
- pigments 80%
- discount obtained?
- cost after 10% discount (Paid in the month incurred)
- White paint 20% (Paid one month in arrears)

(b) Sensitivity analysis

**Explanation**

Sensitivity analysis is the calculation of the volatility of the outcome arising from changes in inputs.

It is used to look at the extent to which variables can change before the planned outcomes change to a critical level. The technique only considers variables in isolation, that is, it considers the impact on the outcome by changing one variable at a time.

**Use in cash budgeting**

In cash budgeting, many assumptions and estimates are made and it is important that management understand which of the estimates are critical to the success of the budget and how much the estimates can change before the outcome is unacceptable to management.
Relevance to M Co

M Co’s cash budget shows that the company is close to exceeding the agreed limit on their overdraft. A change in the estimates could result in the limit being breached. It is therefore very important that that management understand which of the estimates are critical to the success of the budget.

Receipts from trade receivables are dependent on both the sales being made and the payment profile of the customers. The sales figures can be predicted with certainty as the orders are confirmed, and therefore as the figure is unlikely to change, sensitivity analysis is of little use.

M Co is struggling with control of receivables, and the payment profile could change, so sensitivity analysis is going to be of more use. M Co needs to consider what will happen if the payment profile worsens and, for example, only 30% of sales are received in the month following sale. Will this result in the overdraft limit being exceeded?

2 (a) Net Present Value calculation

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Income</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sales of fruit tons x $9</td>
<td>$126,000</td>
<td>$162,000</td>
<td>$216,000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Old tractor</td>
<td>46,000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Land</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Payments</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Land</td>
<td>(100,000)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bushes</td>
<td>(16,000)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fertilisers and pesticides</td>
<td>($11,000)</td>
<td>($11,000)</td>
<td>($11,000)</td>
<td>($11,000)</td>
<td>($11,000)</td>
<td>($11,000)</td>
</tr>
<tr>
<td>Salary</td>
<td>(15,000)</td>
<td>(15,000)</td>
<td>(15,000)</td>
<td>(15,000)</td>
<td>(15,000)</td>
<td>(15,000)</td>
</tr>
<tr>
<td>Labourers W1</td>
<td>(12,000)</td>
<td>(15,428)</td>
<td>(20,570)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>New tractor</td>
<td>(75,000)</td>
<td>(75,000)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alternative storage (W2)</td>
<td>(8,500)</td>
<td>(8,500)</td>
<td>(8,500)</td>
<td>(8,500)</td>
<td>(8,500)</td>
<td>(8,500)</td>
</tr>
<tr>
<td>Variable overheads (W3)</td>
<td>(15,000)</td>
<td>(14,250)</td>
<td>(13,538)</td>
<td>(13,538)</td>
<td>(13,538)</td>
<td>(13,538)</td>
</tr>
<tr>
<td>Net cash flow</td>
<td>(153,500)</td>
<td>(124,500)</td>
<td>(48,750)</td>
<td>65,962</td>
<td>98,534</td>
<td>315,892</td>
</tr>
<tr>
<td>Discount factor</td>
<td>1</td>
<td>0·909</td>
<td>0·826</td>
<td>0·751</td>
<td>0·683</td>
<td>0·621</td>
</tr>
<tr>
<td>Present Value</td>
<td>(153,500)</td>
<td>(113,171)</td>
<td>(40,268)</td>
<td>49,537</td>
<td>67,299</td>
<td>196,169</td>
</tr>
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Net Present Value (NPV) $6,066. The NPV is positive, therefore accept the project. It should be noted that the decision is marginal.

Workings

W1 Labourers

<table>
<thead>
<tr>
<th></th>
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<th>2</th>
<th>3</th>
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<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tons harvested</td>
<td>14,000</td>
<td>14,000</td>
<td>18,000</td>
<td>24,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percentage increase</td>
<td>28·57%</td>
<td>31·75%</td>
<td>33·33%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Labourers’ wages $</td>
<td>12,000</td>
<td>12,000</td>
<td>15,428</td>
<td>20,570</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

W2 Alternative storage

If the current barn is extended, the present value will be $20,000 + $20,000 x 0·909 = $38,180
If the unit is rented from the neighbour, the present value will be $8,500 x (1 + 3·170) = $35,445
Therefore rental is the lower present value and the best option.

W3 Variable overheads

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increased overheads ($31,250 – 0·2 x 31,250 – 10,000) in year one then reducing at 5% per annum until year three</td>
<td>15,000</td>
<td>14,250</td>
<td>13,538</td>
<td>13,538</td>
<td>13,538</td>
<td>13,538</td>
</tr>
</tbody>
</table>

(b) Leases and hire purchase

Finance leases

Finance leases are an agreement between the lessee, who uses the asset, and the lessor, who provides the finance. The equipment is usually supplied by a third party.

The lessee is responsible for the upkeep and maintenance of the asset.

The lease period is split into two:

• The primary period which covers most, if not all of the useful economic life of the asset. Lease payments made during this period will cover the full cost of the asset and provide the lessor with a return on his investment.

13
– The secondary period is an indefinite period of time, during which the lessee is usually allowed to carry on leasing the asset, for a very low lease payment.

If, at the end of the primary lease period, the lessee does not wish to enter into the secondary lease period, the lessor (who owns the asset) may allow the lessee to sell the asset and pay only a small percentage of the sale proceeds to the lessor.

Operating leases
An operating lease is a rental agreement between the lessee, who uses the asset and the lessor, who supplies the equipment.
The lessor is responsible for the maintenance and upkeep of the equipment.
The lease period is usually less than the economic life of the asset. At the end of the agreement, the lessor can either sell the equipment or lease the equipment to someone else.

Hire Purchase
Hire purchase is a form of credit finance. The supplier sells the equipment to a finance house and also delivers the equipment to the customer.
The customer will pay a deposit to the finance house, and then regular payments, consisting of both an interest and capital element for the life of the hire purchase agreement.
At the end of the term of the agreement, the purchaser obtains full legal title to the equipment.

3 (a) Motives for holding cash
The three motives for holding cash according to Keynes are:
(i) The transactions motive – a business needs to hold cash to meet its day-to-day obligations e.g. paying suppliers.
(ii) The precautionary motive – a business needs to hold cash to meet unexpected expenses.
(iii) The speculative motive – a business needs to hold cash so that they can take advantage of investment opportunities.

(b) Investing surplus finds
Factors to consider when deciding how to invest surplus cash and their interaction:
(i) Return. Return from an investment can be obtained from either or both an annual cash flow (e.g. interest or dividend receipts) and any increase in the value of the securities that have been purchased (e.g. a share or bond price increase). A company will seek to maximise the after tax return subject to the risk involved and consideration of environmental/ethical/social factors.
(ii) Liquidity. A company must maintain liquidity, and have cash or other liquid assets available to use when required. Some investments must therefore be highly liquid. Generally the higher the level of liquidity, the lower the level of risk and the lower the level of return.
(iii) Risk. A company will have what it considers to be an acceptable level of risk. Some investments are riskier than others. A company may invest some funds in low risk investments and some funds in high risk investments, but overall, the company’s acceptable risk level should not be exceeded. Generally, a higher return comes from investments which involve a higher risk.
(iv) Maturity. This considers the duration of the investment. Generally the longer the investment is made for, the higher the return.

(c) Ordinary shares and certificates of deposit
(i) Ordinary shares
Ordinary shareholders are the owners of the company – they can participate in the governance of the company.
Shares are issued for an indefinite period, although they may be repurchased by the company.
The return can arise through an increase in the market value of the share and/or receiving dividends. The market value can fluctuate up or down and ordinary shareholders do not have a right to be paid dividends.
Ordinary shares in listed companies can usually be sold easily on the stock exchanges. Ordinary shares in small limited companies are much harder to sell, as there is no market set up on which the shares can be traded easily. The liquidity of the investment therefore depends on which type of company the shares are held in.
Should the company be liquidated, the ordinary shareholders will be paid back after the payables and the preference shareholders. This means that in practice, the capital they invested in the company will usually be lost. This, combined with the lack of certainty in return, means that shares are viewed as a high risk investment.

(ii) Certificates of deposit (CDs)
A CD is a certificate, issued by a bank that acknowledges that a sum of money has been deposited for a certain period of time – anywhere between seven days and five years, although most have a term of six months.
If the holder of the CD cannot wait for cash until the certificate matures, then the certificate can be sold easily, at any time on the certificate of deposit market – one of the London Money Markets. They are therefore a liquid investment.
CDs usually offer a competitive rate of interest. There is little risk to the original sum invested and due to the features described above, CDs are generally perceived to be low risk.

4. (a) Features of a credit control system

Awareness of terms
The customer must be fully aware of the terms of trade. Payment dates and terms should be discussed at initial meetings that take place, the contract should clearly state the terms and include a clause to say that the customer accepts the terms. The terms should be stated prominently on all invoices and final statements.

Accurate Invoicing
No reason should be given to the customer to delay payment. Invoices must therefore be drawn up correctly. The invoice will need to include the customer’s name and address, the customer’s authorisation reference and the purchase order number, as well as the product details, cost per unit and total amount owing. It should state clearly where payment should be sent.

Prompt invoicing
As soon as the goods have been delivered to the customer, the invoice should be raised and submitted to the customer. This allows the customer the maximum amount of time before payment.

Knowledge of customer systems
It is useful to understand the payment system used by your customer. Some customers will only pay when they receive a reminder. Other customers may have an invoice run once a month. If this is the case, there will be a cut off date after which no more invoices are input into the system.

Knowledge of the system used by a customer can aid collection of receivables.

Resolution of queries
Although many invoice queries that are raised will arise due to operational reasons e.g. faulty goods have been returned, some queries may relate to inaccurate invoicing. Such queries should be dealt with as quickly as possible, and invoices reissued, to minimise the delay in payment by the supplier.

Statements and reminders
A monthly statement should be sent to customers that clearly shows new invoices raised and monies received that month, the outstanding balance that should be paid and the aged analysis of the monies owed.

Chasing payments
Overdue payments should always be chased promptly. For example a reminder can be sent, followed by a phone call. If it appears the customer is not going to pay, the debt can be passed to a debt collection agency, or an internal debt collection division. Eventually a stop order may be issued.

Inducements and penalties
Customers can, for example, be charged interest on overdue balances. This would be stated clearly within the terms of trade.

(b) Whether to factor

Current costs

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current sales = $200,000 x 365/65 = $1,123,077</td>
<td>$</td>
</tr>
<tr>
<td>Cost of financing receivables ($200,000 x 6%)</td>
<td>12,000</td>
</tr>
<tr>
<td>Irrecoverable debts ($1,123,077 x 2%)</td>
<td>22,462</td>
</tr>
<tr>
<td>Credit controller</td>
<td>13,000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>47,462</td>
</tr>
</tbody>
</table>

Cost of factoring

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>New sales = $1,123,077 – $25,000 = $1,098,077</td>
<td>$</td>
</tr>
<tr>
<td>New receivables = $1,098,077 x 30/365 = $90,252</td>
<td></td>
</tr>
<tr>
<td>Credit insurance ($1,098,077 x 2%)</td>
<td>21,962</td>
</tr>
<tr>
<td>F Co finance fee ($90,252 x 80% x 5%)</td>
<td>3,610</td>
</tr>
<tr>
<td>Cost of financing remaining receivables ($90,252 x 20% x 6%)</td>
<td>1,083</td>
</tr>
<tr>
<td>Profit lost ($25,000 x 60%)</td>
<td>15,000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>41,655</td>
</tr>
</tbody>
</table>

If F Co’s services are engaged a saving of $5,807 is made. It is, therefore, financially viable for R Co to engage the services of F Co.
Section A
Per correct answer 2

Marks

Section B

1 (a) Cash budget
Receipts from individuals 0·5
Receipts from companies 2
Ignore bad debts 1
Production cost 1
Labour and overheads 1
Total materials 1
Cost of pigment before the discount 1
Cost of pigment after the discount 1·5
White paint cash flow 1
Timing of white paint payment 1
Rent and rates 1
Ignore depreciation 1
Balance b/fwd 1
Balance c/fwd 1

15

(b) Sensitivity analysis
Each valid point 1 mark. All three areas must be answered to gain full marks 5

20

2 (a) Net present value
Income 1
Machine scrap 0·5
Land (payment and proceeds) 0·5
Bushes 0·5
Fertilisers 0·5
Salary 0·5
Casual labourers 1
New tractor 0·5
Alternative storage 2
Variable overheads 1·5
Present value 0·5
Net present value 0·5
Conclusion 1
Ignore depreciation 0·5

11

(b) Finance lease
1 mark per valid point 3

Operating lease
1 mark per valid point 3

Hire purchase
1 mark per valid point 3

9

20
3  (a) Keynes motives
   1 mark for each valid point 3

(b) Investing surplus funds
   1 mark per valid point 8

(c) (i) Ordinary Shares – 1 mark per valid point 5
      (ii) Certificates of deposit – 1 mark per valid point 4
          20

4  (a) Features of a credit control system
   1 mark per valid point to a maximum of 2 marks per feature 10

(b) Factoring services
   Current costs
      Current sales 0·5
      Cost of financing receivables 1
      Irrecoverable debts 1
      Credit controller 1
   Cost of factoring
      New sales 1
      New receivables 0·5
      Credit insurance 1
      F Co finance fee 1
      Cost of financing the remaining receivables 1
      Cash profit lost 1
      Conclusion 1
          10
          20