MA and FMA Full Specimen Exam Answers

<table>
<tr><th>Question</th><th>Correct answer</th><th>Marks</th></tr>
<tr><td>1</td><td>Functional benchmarking

The company is using functional benchmarking as it is comparing an internal function to a similar function in another company, even though the two companies operate in different industry sectors.</td><td>2</td></tr>
<tr><td>2</td><td>Setting a cost by subtracting a desired profit margin from a competitive market price

Target costing is when a cost is determined by subtracting a desired profit margin from a competitive market price.</td><td>2</td></tr>
<tr><td>3</td><td>Process F – Abnormal loss Process G – Abnormal gain

<table>
<tr><td>Process</td><td>Normal loss as % of input</td><td>Input (litres)</td><td>Expected output</td><td>Actual output</td></tr>
<tr><td>F</td><td>8</td><td>65,000</td><td>92% x 65,000 = 59,800</td><td>58,900</td></tr>
<tr><td>G</td><td>5</td><td>37,500</td><td>95% x 37,500 = 35,625</td><td>35,700</td></tr>
</table>
Process F: abnormal loss of 900 litres (58,900 - 59,800)
Process G: abnormal gain of 75 litres (35,700 - 35,625)</td><td>2</td></tr>
<tr><td>4</td><td>27000

As production volume is greater than sales volume, there is a closing inventory of 2,000 units (14,000 - 12,000).
When inventory increases, profit under absorption costing is higher than profit under marginal costing.
Difference in profit = change in inventory x overhead absorption rate (OAR) per unit
= 2,000 units x ($63,000/14,000 units)
= $9,000
Profit under marginal costing = $36,000 - $9,000 = $27,000</td><td>2</td></tr>
<tr><td>5</td><td>Differences in workforce motivation

The differences in workforce motivation should not be allowed for, as the motivation of the workforce cannot be measured in an objective way to compare the efficiency of the management of the two organisations.</td><td>2</td></tr>
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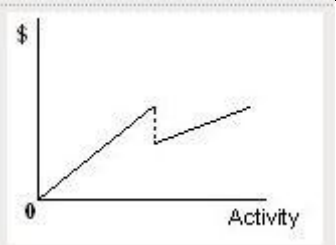
6	**Random sampling** Random sampling is when each member of the target population has an equal probability of being chosen.	*2*
7	**147000** Production budget = sales + closing inventory - opening inventory = 19,000 + 3,000 - 4,000 = 18,000 units Material usage budget = production units x material usage per unit = 18,000 x 8kg per unit = 144,000 kg Material purchases budget = usage + closing inventory - opening inventory = 144,000 + 53,000 - 50,000 = 147,000kg	*2*
8	 Raw material costs are costs which change with activity, so the line has to start at the origin of the graph. As there is a fall in price per unit the line has to have a vertical drop part way through. The correct graph is Graph 4, as the line after the fall in price would also go through the origin if it is extrapolated, which shows the cost is variable and will increase proportionately with activity.	*2*
9	**It helps coordinate the activities of different departments** **It establishes a system of control** Budgets help to co-ordinate the activities of different departments and are also used by organisations as a system of control. They are not a legal reporting requirement and are a way for strategic objectives to be translated into tactical and operational goals, rather than a starting point for strategic planning.	*2*
10	**2 only** When junior management participate in setting budgets, they feel they have more ownership of the	*2*

	budget and are therefore more motivated to achieve the budget.	
11	**30** Residual income = operating profit - (imputed interest x capital employed) $36,000 = operating profit - (12% x $200,000) Operating profit = $36,000 + $24,000 = $60,000 Return on investment = operating profit/capital employed x 100 = $60,000/$200,000 x 100 = 30%	*2*
12	**An increase in direct material prices** **An increase in raw material usage per unit** An increase in the direct material price and an increase in the raw material usage per unit would be possible causes for the adverse direct material variance.	*2*
13	**$130,000** The difference between the fixed budget profit and the standard profit on actual sales is the sales volume variance. Fixed budget profit = standard profit on actual sales + sales volume variance = $120, 000 + $10,000 = $130,000	*2*
14	**1 and 2** Return on investment and market share are suitable strategic performance measures. The number of customer complaints would be more of an operational performance indicator.	*2*
15	**0** **- 0.94** 0 and -0.94 are correct as the correlation coefficient lies between the values of -1 and +1.	*2*
16	**Sales volume variance** The sales volume variance would change as under marginal costing it is valued at standard contribution, whereas under absorption costing it is valued at standard profit.	*2*
17	**13680** Using the high-low method; Variable cost per unit = ($15,120 - $11,280)/)10,000 - 6,000) = $0.96	*2*

	Fixed costs at the highest output level = $15,120 - ($0.96 x 10,000 units) = $5,520 At 85% capacity, the budgeted total production cost will be = $5,520 + ($0.96 x 8,500 units) = $13,680	
18	**12.5%** The IRR of a project is equal to the cost of capital which would give a NPV of $0. At 10% the NPV is $50; at 11% the NPV would fall to $30; at 12% the NPV would fall to $10, therefore at 12.5% the NPV would fall to $0. 12.5% is the IRR of the project.	*2*
19	**$128,500** Production Cost Centre P Allocated and apportioned $95,000 Re-apportionment of Y (30% x $30,000) $9,000 Re-apportionment of X (50% x $49,000) $24,500 $128,500 Note: X's overheads includes 10% re-apportionment of Y's costs ($3,000)	*2*
20	**$220** With a selling price of $672 and a net profit mark-up of 20%, the total cost is ($672/1.2) = $560. The fixed overhead cost is $340, therefore the variable cost = $560 - $340 = $220.	*2*
21	**It restricts the performance of an organisation for a given period** **It affects the order in which an organisation prepares its budgets** The principal budget factor is the factor which restricts the company from making maximum profits. In many cases this will be sales, but it could be another limiting factor. When preparing budgets, the principal budget factor is the starting point and all budgets will flow from it.	*2*
22	**$39,200** $40,000 + $900 - $1,000 + $700 - $500 - $900 = $39,200	*2*
23	**It helps to better understand customer behaviour and preferences – True** **It helps to analyse the efficiency of business**	*2*

	processes in real time – True Big data analytics allow organisations to process large volumes of data from numerous internal and external sources. This will allow an organisation to gain detailed insights into its customer behaviour and their preferences and also allow it to analyse how efficient its internal processes are.	

24	**2.7** | Yr	Cash flow	Disc factor	Disc cash flow	Cumulative
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0	-100,000	1	-100,000	-100,000
1	35,000	0.909	31,815	-68,185
2	45,000	0.826	37,170	-31,015
3	60,000	0.751	45,060	14,045
4	75,000	0.683	51,225	65,270
5	80,000	0.621	49,680	114,950 | Payback occurs between years 2 and 3. The proportion of year 3 required is (31,015/45,060) = 0.68, so the discounted payback period is 2.7 years.	*2*
25	**Absorption costing profit/(loss)** **Month 1: $200 Month 2: $3,200** **Marginal costing profit/(loss)** **Month 1: $(400) Month 2: $4,400** 		Month 1 (units)	Month 2 (units)
Opening inventory	400	500
+ Production	3,900	4,200
	4,300	4,700
- Sales	(3,800)	(4,400)
Closing inventory	500	300	 In Month 1 closing inventory is higher than opening inventory so absorption costing profit will be higher than marginal costing profit. In Month 2 closing inventory is lower than opening inventory so marginal costing profit will be higher than absorption costing profit. Option 3 is the only one which reflects the above.	*2*
26	**1 and 2 only** The advantages of linear regression analysis over the high-low method are that the reliability of the analysis can be statistically tested and that it takes into account all of the data.	*2*

27	**Use of bar coding and scanning equipment** **Completion of timesheets by employees** The use of bar coding and scanners and the completion of time sheets are examples of direct data capture costs because they are costs involved in capturing the data for the first time. Time spent by the payroll department processing employee costs and finance staff preparing a monthly sales report are not direct data capture but are examples of processing costs.	*2*
28	**Quantified short term targets the organisation seeks to achieve** An organisation's mission statement will usually follow its long-term aims. It will includes its values and beliefs, its products and services, how it wants to compete and its commitments to its major stakeholders. Quantified, short-term targets are usually included in an organisation's budget.	*2*
29	**180** Standard time for actual output of 200 units = 200 units x 3 minutes per unit = 600 minutes or 10 hours Gross pay = 10 hours x $18 = $180	*2*
30	**Under absorbed by $3,875** Absorbed overhead (actual hours x OAR) = 30,000 x $3.50 $105,000 Actual overhead $108,875 Under absorption $3,875	*2*
31	**No strict rules govern the way in which the information is presented** **It may be presented in monetary or non-monetary terms**	*2*

	Management information does not have to be presented in a set format; it is usually presented in a manner suitable to the organisation concerned. Management information can be both financial and non-financial.	
32	**61 degrees** The angle of the section of the pie chart representing Market 3 = $51,000/$300,000 x 360 degrees = 61 degrees	*2*
33	**A purchase order** Purchase orders produce transactional data. Social/human data includes all types of social media posts, tweets, videos and blog posts. It is mostly non-numerical and can be difficult to analyse. The output from a fitness tracker and a GPS vehicle tracking system would be classified as machine (sensor) data sources.	*2*
34	**1461** EOQ = √(2 x 20 x 80,000)/(25 x 0.06) = 1,461	*2*
35	**2.28%** Z-score = (x - μ)/σ Therefore: (80 – 56)/12 = 2 From the normal distribution table, 2 = 0.4772 To find the probability of scoring more than 80: 0.5 – 0.4772 = 0.0228 or 2.28% as a %.	*2*

MTQ 36
Task 1 (5 marks)

Computerised tracking system investment of $2,100,000	**Relevant** The tracking system investment is a future incremental cash flow arising as a result of the

	project, so is relevant.
Depreciation of $420,000 in each of the five years	**Irrelevant** Depreciation is a notional cost i.e. a non-cash item so is not relevant
Staff training costs of $425,000	**Relevant** Staff training costs of $425,000 are a future incremental cash flow and so are relevant
New staff total salary of $120,000 per annum	**Relevant** Staff salary costs of $120,000 are relevant as they are for new staff recruited specifically for the project.
Staff training costs of $75,000	**Irrelevant** Staff training costs of $75,000 have already been spent and so are a sunk cost. They are not relevant to whether the project goes ahead.
Interest cost of $150,000 per annum	**Irrelevant** Interest cost of $150,000 is not relevant. The NPV is discounted at the company's cost of capital which accounts for the return required by the company's providers of finance, which would include debt providers.

Task 2 (3 marks)

Incremental sales in Year 1	**800000**

	With investment = $11 million Without investment = $10.2 million Incremental sales = $800,000
Savings in vehicle running costs in Year 1	**110000** $11million x 1% = $110,000
Present value of the maintenance costs over the life of the contract	Answer range: **284000 – 285000** $75,000 x annuity factor at 10% for five years $75,000 x 3.791 = $284,325

Task 3 (2 marks)

The project is worthwhile because the IRR is greater than the cost of capital

As the project's IRR is 14%, which is greater than the company's cost of capital of 10%, then the project is worth investing in.
As the IRR represents a cost of capital which would give an NPV of zero on the project, then a cost of capital lower than the IRR would generate a positive NPV and increase shareholder wealth, showing that the project is worthwhile.

MTQ 37
Task 1 (2 marks)

=(C9*C4)-(150,000*8)

Direct labour efficiency variance = (standard hours for actual production - actual hours) x standard rate

= (26,000 hours x $48) - (150,000 x $8)
= $48,000 F

Task 2 (6 marks)

Standard cost operating statement Month 1	**$**		**$**	
Budgeted contribution			700,000	
Sales volume variance			**16800**	**Fav**
Standard contribution on actual sales			**716800**	
Sales price variance			**5120**	**Adv**
			711,680	
Cost variances				
Total direct materials variance	12,800	Adv		
Direct labour rate variance	21,000	Adv		
Direct labour efficiency variance	48,000	Fav		
Total variable production overhead variance	10,000	Fav		
			24,200	Fav
Actual contribution			735,880	

Gap 1 - The difference between budgeted contribution and standard contribution on actual sales is the sales volume variance.
Gap 2 - Sales volume variance = (budgeted sales - actual sales) x standard contribution
= (25,000 - 25,600) x $28
= $16,800
Gap 3 - The sales volume variance is favourable as the actual sales are greater than the budgeted sales.
Gap 4 - Standard contribution on actual sales = budgeted contribution + sales volume variance = $700,000 + $16,800 F = $716,800
Gap 5 - Sales price variance = (actual sales x budgeted selling price) - actual revenue = (25,600 x $120) - $3,066,880 = $5,120
Gap 6 - The selling price variance is adverse as the actual sales units should have generated revenue of $3,072,000 but actually sold for $3,066,880.

Task 3 (2 marks)

Higher grade labour performed tasks more efficiently
A productivity bonus was paid to direct labour

The direct labour rate variance is adverse which indicates that labour cost more. This could have arisen due to the use of higher grade labour or paying a productivity bonus. Both of these factors could explain why the labour efficiency variance was favourable.

MTQ 38
Task 1 (6 marks)

Return on capital employed	**25** % ROCE = (profit before interest and tax/average capital employed) x 100 = ($48 million/ $192million) x 100 = 25%
Operating profit margin	**10** % Operating profit margin = (profit before interest and tax/ sales revenue) x 100 = $48 million/$480 million = 10%
Asset turnover	**2.5** times Asset turnover = sales revenue/average capital employed = $480 million/$192 million = 2.5 times
Average wait for a telephone repair	Answer range: **29-30** days Average wait for a telephone repair = (average number of unrepaired telephones per day/average number of telephones

	returned for repair each year) x 365 = (804/10,000) x 365 = 29 days

Task 2 (2 marks)

Percentage of customers lost per annum	**6.00** % Percentage of customer lost per annum = (number of customers lost/average number of customers) x 100 = (117,600/1,960,000) x 100 = 6%
Percentage of sales attributable to new products	Answer range:

	1.66-1.67 % Percentage of sales attributable to new products = (sales attributable to new products/sales revenue) x 100 = ($8 million/$480) million = 1.67%

Task 3 (2 marks)

A balanced scorecard measures performance from four perspectives: customer, innovation and learning, financial and	**internal business process** The four perspectiv es of the balanced scorecard are: financial, customer, internal business process and innovation and learning.
The scorecard is balanced in that it requires managers to	**deliver performance in all four areas** The scorecard is balanced in that it requires managers to focus performance in all four areas.