**AFB MOCK EXAM 1**

**ANSWER QUESTION 1 AND ANY TWO OTHER QUESTIONS**

**Section A: Compulsory question for 40 marks**

**Question** 1

The trial balance below is for ME1 plc for the y/e 31/12/2021 [in £000s]

|  |  |  |
| --- | --- | --- |
| Purchases and Sales | 700 | 1140 |
| Inventory 1/1/2021 | 50 |  |
| Receivables and payables | 87 | 70 |
| Selling & distribution expenses | 50 |  |
| Rent, rates and insurance | 40 |  |
| Staff salaries | 100 |  |
| Advertising | 20 |  |
| Gas & electricity | 25 |  |
| Audit fee | 10 |  |
| Bad debt | 4 |  |
| Directors’ remuneration | 34 |  |
| Debenture interest | 10 |  |
| Interest on bank loan | 7 |  |
| Cash | 4 |  |
| Bank | 9 |  |
| Premises at cost | 500 |  |
| Equipment at cost | 130 |  |
| Equipment – accumulated depreciation |  | 30 |
| Furniture & fittings at cost | 100 |  |
| Furniture & fittings – accumulated depreciation |  | 60 |
| £1 Ordinary share capital |  | 350 |
| 7% Long term bank loan |  | 100 |
| 11% Debentures |  | 100 |
| Share premium |  | 20 |
| Retained profits |  | 30 |
| Interim ordinary dividend | 20 |  |
| Totals | 1900 | 1900 |

**Additional information as at 31/12/2021**:

* Inventory was valued at £80,000.
* Rent prepaid £4000; Distribution expenses prepaid £3000;
* Accruals for rates £1000; Gas & electricity £1000; Audit fee £2000
* Debenture interest to be accrued
* The equipment to be depreciated by 20% on reducing balance
* The furniture & fittings to be depreciated by 20% on straight line.
* The directors wish to provide £26,000 for taxation.
* The directors propose a final ordinary dividend of 7p per share.

**Required:**

**a) Income Statement for the year ended 31/12/2021. [20 marks]**

**b) Statement of Financial Position as at 31/12/2021. [20 marks]**

**Suggested solutions**

**a)** ME1 plc

Income Statement for the y/e 31/12/2021 [in £000s]

Sales 1140

Cost of sales

Opening inventory 50

Purchases 700

Closing inventory [80] [670]

GP 470

Expenses

Rent, rates and insurance [40 – 4 + 1] 37

Selling & distribution expenses [50 – 3] 47

Gas & electricity [25 + 1] 26

Audit fee [10 + 2] 12

Debenture interest [10 +1] 11

Depreciation of equipment [130 – 30] x 0.2 20

Depreciation of furniture & fittings [100 x 0.2] 20

Staff salaries 100

Advertising 20

Bad debt 4

Directors’ remuneration 34

Interest on bank loan 7 [338]

PBT / EBT 132

CT [26]

PAT / EAT 106

Dividends – Interim 20

-- Final [350 x £0.07] 24.5 [44.5]

Retained profit for the year 61.5

Retained profit b/f 30

Retained profit c/f 91.5

**b)** ME1 plc

SOFP as at 31/12/2021 [in £000s]

Non-current assets Cost Accumulated NBV

Depreciation

Premises500 --- 500

Equipment130 30 + 20 = 50 80

Furniture & fittings100 60 + 20 = 80 20

730 130 600

Current assets

Inventory 80

Receivables 87

Prepayments [4 + 3] 7

Bank 9

Cash 4 187

**Total assets** 787

Share capital

£1 Ordinary shares 350

Reserves

Share premium 20

Retained profit 91.5

Shareholders’ funds 461.5

Non-current liabilities

7% Long term bank loan 100

11% Debentures 100 200

Current liabilities

Accruals [1 + 1 + 2 +1] 5

Payables 70

CT 26

Proposed dividends 24.5 125.5

**Shareholders’ funds & liabilities**  787

**Section B: Attempt ANY Two questions – 30 marks each**

**Suggested solutions are within each question**

**Question 2**.

M plc requires your advice on the following investment potential to expand in Scotland. Its market research team has made the following five-year forecasts for the product to be produced and sold there.

* New equipment costing £150,000 (year 0) will be required immediately. This will have a residual value of £40,000 in year 5.
* The product’s selling price and variable costs are expected to be £25 per unit and £15 per unit respectively over the 5 years.
* Incremental fixed costs per annum specific to this investment potential is estimated to be £75,000 over the investment period.
* Sales volume in year 1 is expected to be 10,000 units. Forecasts for the remaining 4 years are: 12,000 units in year 2; 15,000 units in year 3; 14,000 units in year 4; 11,000 units in year 5.
* M plc’s cost of capital is 10 % and the payback required for the investment is 3 years.
* Discount factors @ 10 % are as follows:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Year | 1 | 2 | 3 | 4 | 5 |
| Discount factors @ 10 % | 0.909 | 0.826 | 0.751 | 0.683 | 0.621 |

**Required for the above investment proposal:**

**a) The relevant annual cash flows for the proposal. [6 marks]**

**Relevant cash flows for the investment proposal [£000s]**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Year | 0 | 1 | 2 | 3 | 4 | 5 |
| Initial investment | [150] |  |  |  |  |  |
| Total contribution @£10 per unit sold |  | 100 | 120 | 150 | 140 | 110 |
| Incremental fixed costs |  | [75] | [75] | [75] | [75] | [75] |
| Residual value of equipment |  |  |  |  |  | 40 |
| Relevant cash flows | [150] | 25 | 45 | 75 | 65 | 75 |

**b) Payback and Net Present Value (NPV). [6 marks]**

Cumulative cashflows in years 3 and 4 are £145,000 and £210.000 respectively.

Hence payback is between years 3 and 4**.**

Payback = 3 + [£5,000/£65,000] =3.08 years

NPV @10% [in £000s]

= 25 x 0.909 + 45 x 0.826 + 75 x 0.751 + 65 x 0.683 + 75 x 0.621 – 150

= 57.19

NPV @10% = £57,190

**c) Advice the company. [5 marks]**

For the above accept/reject investment decision, any DCF [Discounted Cash Flow] method [NPV or IRR] should be used. These methods use all project’s cash flows and account for time vale of money.

In this case the NPV @10% cost of capital is positive. The investment makes an economic profit of £57,190. So, it qualifies for investment [i.e. can be accepted] on quantitative analysis basis.

Payback is a non- DCF method and so ignores time value of money. Also it has other problems [e.g. ignores cashflows beyond its payback period; the criterion set by management may be subjective]. So, payback should not be relied on as the main method to provide advice on investment decisions irrespective of whether the payback is within the management’s payback criterion or not.

**d) State five other factors that require consideration before a final decision is**

**made.** **[5 marks]**

Any 5 from the following stated and briefly explained:

* Accuracy and completeness of the project’s cash flows.
* Inflation rates may differ and affect the costs and revenues [cash flows] over the project ‘s life. Will this affect the cost of capital over the years of the investment.
* Incremental taxation implications for the company may affect the NPV.
* Impact on sales of existing products/services of the company.
* Reaction of competitors can have an adverse effect on the investment’s cash flows.
* Environmental considerations/green issues affecting the investment proposal.
* Industrial relations – management and employee issues relating to the new investment, training requirements, morale of the work force, introduction of new techniques, machinery and tools.
* Impact of existing and new legislation e.g. Health and safety legislation.

**e) The company’s finance director confidently stated that the proposal’s IRR would be “well over 10 % for the investment.” Explain what IRR is and why the finance director was so confident that the IRR would be well in excess of 10 %.** **[5 marks]**

IRR is the investment’s return in DCF terms. It’s the rate of return or cost of capital or discount rate at which the investment’s NPV is zero.

The discount rate and discount factor have an inverse relationship. This means as the discount rate increases the project’s NPV decreases and tends towards zero before it becomes negative.

Since at 10% cost of capital the NPV is positive, this cost of capital has to increase above 10% for the NPV to reduce and get to zero.

So, this investment’s IRR must be higher than 10%. Hence the confidence shown by the finance director that the IRR will be more than 10%.

**f) State the advantages of IRR. [3 marks]**

* It is expressed as a % return which may be easier to understand and use for investment decision making [i.e. it is a user friendly rate]
* It considers time value of money
* It uses all the project’s cash flows

**Question 3**.

The latest financials [in £000s] of R plc are provided below.

|  |  |  |
| --- | --- | --- |
| Year ended 31st March | 2022 | 2021 |
| Sales | 120 | 105 |
| Gross profit | 50 | 45 |
| Profit before tax | 10 | 12 |

|  |  |  |
| --- | --- | --- |
| SOFP as at 31st March | 2022 | 2021 |
| Current assets: |  |  |
| Inventory | 14 | 10 |
| Receivables | 16 | 21 |
| Cash | 2 | 3 |
|  |  |  |
| Current liabilities: |  |  |
| Payables | 12 | £13 |
| Bank overdraft | 5 | 4 |
| Dividends | 7 | 7 |
| Corporation tax | 3 | 5 |

**Required:**

**a) Calculate the following ratios for both years: [14 marks]**

* **Gross profit ratio**
* **Net profit ratio [using profit before tax]**
* **Current ratio**
* **Quick ratio**
* **Inventory holding period in days**
* **Receivables ratio**
* **Payables ratio**

**a)**

|  |  |  |  |
| --- | --- | --- | --- |
| Ratios | Formulae | 2022 | 2021 |
| GP ratio | [GP/Sales]x 100 | [50/120] x 100 = 41.7% | [45/105] x 100 =  42.9% |
| NP ratio | [PBT/Sales] x 100 | [10/120] x 100 = 8.3% | [12/105] x 100 = 11.4% |
| Current ratio  Norm 2:1 | Current assets/Current liabilities | £32,000 / £27,000 =  1.2 or 1.2 times or 1.2:1 | £34,000 /£29,000 = 1.2 |
| Quick ratio  Norm 1:1 | Quick assets/Current liabilities | £18,000 / £27,000 =  0.7 | £24,000 / £29,000 = 0.8 |
| Inventory holding ratio | [Closing inventory / Cost of sales] x 365 | [£14,000/£70,000] x 365 = 73 days | [£10,000/£60,000] x 365 = 60.9  = 61 days |
| Receivables ratio | [Receivables / Sales] x 365 | [£16,000 / £120,000] x 365 = 48.7 = 49 days | [£21,000/ £105,000] x 365 = 73 days |
| Payables ratio | [Payables / Cost of sales] x 365 | [£12,000 / £70,000] x 365 = 62.57 = 63 days | [£13,000 / £60,000] x 365 = 79.08 = 79 days |

**b) Comment on the performance of the company over the two years using the above ratios [16 marks]**

Commentary

Profitability

There is a slight decrease in the GP ratio in 2022 – this may indicate a reduction in selling prices or increase in purchase costs or the effects of both of these.

There is also a decrease in the NP ratio – this may indicate an increase in expenses in 2022.

Liquidity

The current ratios for both years are far lower than the norm of 2:1 and are held at the same level.

The quick ratio has decreased in 2022 to a level that may indicate cash flow/liquidity problems for the immediate future.

Efficiency/Working capital management

Inventory holding has increased – is this due to an excessive holding of inventory in 2022? Does this contain obsolete inventory?

Both the receivables and payables ratio have improved in 2022. The company may have improved on its credit control of the receivables in 2022. Paying the suppliers earlier could have been to obtain discounts on its purchases or are these new terms of trade with its supply chain?

Conclusions/Recommendations

* There is a need to better manage expenses to increase its net profit
* Both liquidity ratios require management attention – these need to increase to the norms as indicatedabove to avoid cash flow/liquidity problems for the immediate future.
* Inventory holding also require management attention – improvement in this can lead to a reduction in obsolete inventory if this is the reason for its increase in 2022. Reducing inventory holding can increase future sales and profits.

**Question 4**

Salah Enterprises Ltd produces and sells a variety of frozen burgers and pizzas. One of these is a vegan pizza and the following relate to this product.

In the year ended 30/04/2022, the company sold 50,000 pizzas. The selling price was £5 per unit and its unit variable costs was £2. The annual fixed costs specific for this product line is £36,000.

For the next accounting year to 30/04/2023, the company expects to increase its selling price to £6 in an attempt to improve profitability. The annual fixed costs would increase by 5%. The company expects to reduce the variable costs by 20%. The sales volume is expected to remain the same at 50,000 pizzas.

**Required:**

**a) The profit for the year ended 30/04/2022. [6 marks]**

Contribution per pizza = £ [5 – 2] = £3

Profit = Total contribution – Total fixed costs

= £3 x 50,000 pizzas - £36,000 = £114,000

**b) The contribution to sales ratio for the year ended 30/04/2023. Explain the significance of your answer. [6 marks]**

Revised variable cost per pizza = £2 x 0.8 = £1.60

Revised contribution per pizza = £ [6 – 1.60] = £4.40

C/S ratio = Contribution per pizza / Selling price per pizza

= £4.40 / £6 = 0.73

This C/S ratio of 0.73 means that for every £1 of sales for this pizza, the

contribution is 73 pence.

This product’s C/S ratio can be used to compare with the C/S ratios of

other products made and sold by the company to see how their relative

ratios rank in terms of profitability and in the recovery of the company’s

fixed costs and profit.

**c) Prepare a statement to show the expected total contribution and the resulting net profit or loss for the year ended 30/04/2023. [7 marks]**

£000

Total contribution: sales volume x contribution per pizza 220

50,000 pizzas @ £4.40

Less: Fixed costs [£36,000 x 1.05] [37.8]

Profit expected for the y/e 30/04/2023 182.2

**d) The breakeven sales and margin of safety for the year ended 30/04/2023.**

**[6 marks]**

BEP [number of pizzas] = Total fixed costs / Contribution per pizza

= £37,800 / £4.40

= 8590.9 = 8591 pizzas.

Margin of safety = 50,000 – 8591 = 41,409 pizzas

**e) State the limitations of breakeven analysis as an aid to decision-making.**

Assumptions and limitations of the above analysis are:

1) All costs are analysed into variable and fixed costs. Hence other types of cost

behaviour are excluded from the analysis.

2) Variable cost per unit, total fixed costs and selling price per unit are

assumed to remain constant within the relevant range.

3) All goods produced are sold [i.e. inventory levels are expected to remain

constant].

4) Other factors affecting production and sales (e.g. production methods, sales

promotion techniques etc) are expected to remain the same.

5) Production-sales mix are expected to remain constant in multiproduct

scenarios.

**[5 marks]**

**END OF EXAMINATION PAPER**

**[You should have answered Question 1 and any 2 other questions.]**