

| <p>Part (a) Critically evaluate the tasks performed by ChatGPT as part of Valuevest’s process of identifying and evaluating the suitability of the potential investment in ACL, based on –</p> <p>(i) the earnings-based valuation of ACL performed by ChatGPT; and</p> <ul style="list-style-type: none"> Do not perform any calculations or re-perform any of the calculations provided by ChatGPT. | <p>Marks</p> |
|---|---------------------|
| <p>1. ChatGPT made two arithmetic errors in valuing the stake in ACL:</p> | |
| <p>1.1. It incorrectly used a P/E multiple of 9.5 for Ditto T instead of a multiple of 9.8 when calculating the average P/E multiple.</p> | <p>1</p> |
| <p>1.2. The value calculated using the ChatGPT figures should be R12 264 500, not R12 265 500. Errors like these are not likely to give Valuevest’s investors nor its management comfort in relation to the accuracy of the output provided by ChatGPT.</p> | <p>1</p> |
| <p>2. ChatGPT correctly removed the non-recurring profit from the Phisor-contract.</p> | <p>1</p> |
| <p>3. ChatGPT removed the before-tax profit in adjusting for the Phisor-contract. It should have removed the after-tax profit</p> | <p>1</p> |
| <p>4. The actual profit for FY2023 was less than that for FY2022 and therefore it would have been more appropriate to use average earnings (ideally a weighted version thereof) for the two years, as this would be a better reflection of maintainable earnings.</p> | <p>1</p> |
| <p>5. As an alternative approach, a longer earnings history for ACL could be used in order to identify a trend in the historic earnings (after adjustments) for ACL. This would be an alternative approach to using a weighted average earnings for FY2022 and FY2023.</p> | <p>1</p> |
| <p>6. Alternatively, instead of using a trailing/historic P/E multiple, the forecast earnings for FY2024 could be used, multiplying the latter by a forward PE multiple.</p> | <p>1</p> |
| <p>7. ChatGPT did not evaluate whether there were any once-off costs in FY2023 (and for the matter in FY2022), that should have been removed, in order to determine a maintainable earnings figure.</p> | <p>1</p> |
| <p>8. Not adjusting for the bonus payments since it will only commence in FY2024 is incorrect as one needs to determine the maintainable earnings going forward. As these payments will in future affect maintainable earnings the FY2023 earnings (or weighted average maintainable earnings) should have been adjusted, for the bonuses and the related tax effects thereon.</p> | <p>1</p> |
| <p>9. Simply calculating the average PE multiple of the three other companies is not correct. Companies should be evaluated in terms of how similar their business activities are in relation to ACL, their size and sub-industry they operate in, before deciding to calculate an average multiple.</p> | <p>1</p> |
| <p>10. DittoT is an international company and would therefore not be appropriate to use in a South African context due to sovereign risk differences as well as the fact that its operating activities differ from those of ACL.</p> | <p>1</p> |
| <p>11. FoodC is food manufacturer and therefore has a different risk profile to that of ACL. Accordingly, it would be inappropriate to use FoodC as proxy-company.</p> | <p>1</p> |
| <p>12. VLogistics seems to be the closest fit to ACL given the similarity of its operating activities to those of ACL; it should be used as proxy-company.</p> | <p>1</p> |
| <p>13. The PE multiple of VLogistics should have been adjusted for the entity-specific risks of ACL, and for difference in growth prospects between VLogistics and ACL. Examples of these differences could include: unlisted status of ACL, size differences etc. (capped at 2)</p> | <p>2</p> |

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| 14. An adjustment to the VLogistics PE multiple should have been made for the fact that VLogistics has a far more differentiated product base than ACL. | 1 |
| 15. No premium was added to the equity value calculated for ACL. A controlling stake in ACL is being valued. | 1 |
| 16. The investments and the permanent cash surplus were not valued separately even though they have a different risk profile to ACL's business. (Note: this would be the case if the traditional earnings-based model is adapted in order to treat dissimilar assets more appropriately in an earnings-based valuation.) | 1 |
| 17. If the dissimilar assets in par. 14 above, are valued and added separately to the valuation, then investment income and finance income earned on the permanent cash surplus should be removed from maintainable earnings. | 1 |
| 18. The value added by the new four-year contract was not considered. The present value of the after-tax profit estimated over the four-year period should have determined and separately added to the value of ACL's equity. | 1 1 |
| 19. Impairment on the land and buildings held within the right-of-use assets is likely to be a once-off item and should be removed from the valuation | 1 |
| 20. The share option expense related to the 20% after-tax profits should be deducted, as the conditions are met (except for FY2026) in respect of the share-based payment scheme for the executive directors. It seems as if this will be maintained going forward, but it is not included in the FY2023 figures. | 1 |
| 21. The valuation is for an 80% equity stake, but the valuation stops at 100% of equity. This should be multiplied by 80%. | 1 |
| | Available |
| | 24 |
| | Maximum |
| | 8 |
| | Total for part (a)(i) |
| | 8 |

| Part (a) Critically evaluate the tasks performed by ChatGPT as part of Valuevest’s process of identifying and evaluating the suitability of the potential investment in ACL, based on – (ii) the additional work required to assess the reasonability of the forecast income statements (apart from the work already performed by ChatGPT). • Do not perform any calculations or re-perform any of the calculations provided by ChatGPT. | Marks |
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| 1. ChatGPT did touch on most issues given the information provided to it. However more information, such as a break-down of operating expenses, is needed to perform a proper evaluation. | 1 |
| 2. ChatGPT correctly questioned the assumptions underlying the expected increases in revenue and expenses. | 1 |
| 3. The forecasts of ACL should be tested by questioning the growth assumptions based on prior performance. | 1 |
| 4. The forecast line items should be tested against the expected inflation rate, in order to assess the reasonableness thereof. | 1 |
| 5. The forecasts should be tested against industry expectations and indicators | 1 |
| 6. ChatGPT neglected to mention that the forecasts do not include the cash flows on the new four-year contract. Analysts should therefore interrogate the forecasts in order to assess the completeness thereof – have all known future events been factored into the forecasts, if not, the forecasts need to be amended accordingly. | 1 |
| 7. ChatGPT should question if the forecast includes revenue / profits from the Phisor-contract. | 1 |
| 8. ChatGPT does not provide the extent of the growth and increases / declines / changes therein. Growth calculations are provided. The growth percentages should be interrogated in order to assess the reasonability thereof by comparing them against economic indicators, competitor growth rates etc. | 1 1 |
| 9. ChatGPT did not remove the 20% after-tax profits for the share bonus scheme, the beneficiaries thereof being the executive directors, as the conditions are met (except for FY2026). | 1 |
| 10. The forecast interest rates for both the interest charged on the debt and the interest received on the investments, should be assessed by comparing these against economist predictions for South Africa for the next three years. | 1 |
| 11. Consideration needs to be given as to whether the tax calculations were appropriately performed given new legislation, the bonus payments, deferred tax adjustments, etc. | 1 |
| Available | 12 |
| Maximum | 4 |
| Total for part (a)(ii) | 4 |
| <i>Communication skills – clarity of expression</i> | 1 |
| Total for part (a) | 13 |

| Part (b) Perform a valuation ACL using the free cash flow valuation methodology. | | | | | Marks |
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| <ul style="list-style-type: none"> Start with the movement in cash. | | | | | |
| Free cash flow valuation: | | | | | |
| | | 2024 | 2025 | 2026 | |
| | | R'000 | R'000 | R'000 | |
| Movement in cash | | 389 | (5 894) | 11 910 | 1 |
| After-tax bonus | | (2190) | (2190) | (2190) | 1 |
| Add back finance charges | | 12 927 | 11 691 | 11 043 | 1 |
| Tax adjustment on finance charges | | (3 490) | (3 157) | (2 982) | 1 |
| Finance income | | (375) | (401) | (424) | 1 |
| Tax adjustment on finance income | | 101 | 108 | 114 | 1 |
| Dividends | | 1 375 | 2 399 | 2 469 | 1 |
| Debt: capital repayments | | 6 917 | 17 066 | 9 957 | 2 |
| Movement in investment | | 130 | 372 | 117 | 1 |
| Free cash flow | | 15 784 | 19 934 | 30 015 | 1C |
| Terminal value | | | | | |
| $[(30\ 015 \times 1,06)/(0,17-0,06)]$ | | | | 289 235 | 2C |
| | | 15 784 | 19 934 | 319 250 | |
| Present value of FCF at 17% | 227 383 | | | | 1 |
| Long-term debt (129 758 + 23 633) | (153 391) | | | | 1 |
| Investment | 3 372 | | | | 1 |
| Cash | 54 301 | | | | 1 |
| Value of four-year contract (calc 1) | 6 324 | | | | |
| Equity value | 137 989 | | | | |
| Less: Discount for lack of marketability (10%) | (13 799) | | | | 1 |
| | 124 191 | | | | |
| <i>Calc 1:</i> | | | | | |
| | 2024 | 2025 | 2026 | 2027 | |
| | R'000 | R'000 | R'000 | R'000 | |
| Annual profit | 2 160 | 2 268 | 2 381 | 2 500 | 2 |
| Discounted at 17% | 6 324 | | | | 1 |
| Available | | | | | 21 |
| Maximum | | | | | 20 |
| Total for part (b) | | | | | 20 |

| Part (c) Discuss the risks and other relevant strategic factors that Valuevest should consider regarding the decision to make use of an AI such as ChatGPT in performing the valuation of companies that are potential investment opportunities | Marks |
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| 1. ChatGPT does not have access to real-time information or any updates post September 2021. This means that any recent events, trends, or data affecting the company or industry of similar listed companies in the industry will not be factored into the analysis. | 1 |
| 2. The model is not capable of updating its knowledge base with current financial or market data. It can't fetch or update real-time data points that may be critical to a valuation, such as the latest PE, EBIT or EBITDA multiples, market risk premium, or risk-free rate. | 1 |
| 3. ChatGPT does not have the specialised knowledge that an expert in a particular industry might have. These experts might be aware of industry-specific trends, risks, or considerations that AI would not be. | 1 |
| 4. An AI model can efficiently process quantitative data but may overlook qualitative factors such as the quality of the management team, company culture, brand value, or the strategic value of business relationships. These can significantly affect a company's value. | 1 |
| 5. The AI model lacks human judgement, for example to evaluate the companies provided as "similar" listed companies for their suitability for use as a proxy-company or used in calculating an average where a number of proxy companies are considered together. | 1 |
| 6. Complex capital structures, off-balance-sheet items, or specific financial arrangements may be beyond the model's ability to accurately interpret and assess. | 1 |
| 7. AI models are not infallible and can sometimes misunderstand information, make mistakes, or fail to clarify ambiguous information. This is evident from the fact that the AI did not take once-off and non-recurring items into account in the initial earnings-based valuation of ACL. | 1 |
| 8. ChatGPT lacks the ability to understand the full context of a business operation, industry nuances and competitive landscape, all of which are important factors in performing an accurate valuation. | 1 |
| 9. ChatGPT itself warns against trusting only the answer generated by the AI | 1 |
| 10. Retrenchment of staff might lead to negative sentiment under the remaining staff and/or possible legal action by the retrenched staff | 1 |
| 11. However, AI models are part of the future business environment, and it is important to acknowledge and embrace new technology. | 1 |
| 12. ChatGPT will also not be able to perform asset-based valuations as it will not be able to do the tax calculations (tax knowledge is limited to before 2021). | 1 |
| 13. An accuracy rate of 90% is not good enough as an error rate of 10% on the value of a large deal could be a significant amount of money and could affect future returns. | 1 |
| 14. Furthermore, the team of financial specialists reported that the earnings-based valuations performed by ChatGPT were up to 90% accurate. That implies that some valuations were even less accurate which could increase possible future losses. | 1 |
| 15. The AI model is still as effective as the information that is provided to it by human beings. Financial information still has to be prepared and provided in order to perform the valuation. | 1 |
| 16. Valuations still have to be evaluated/checked by valuation specialists for accuracy and reliability, and therefore the human element cannot be eliminated. Relying on AI models reduces the human skill available to evaluate the results provided by the AI model because they will not be as | 1 |

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| involved in the model and the inputs. The human will not be able to understand the intricacies of the valuation if not involved in the whole process. | |
| 17. Some human error could be avoided by using AI for calculations | 1 |
| 18. The data from which the AI model retrieves its inputs may have biases that can lead to incorrect information / valuations (e.g. more American financial data, no control for fail bias). | 1 |
| 19. The possibility of using AI for the entire investment process aligns with the strategic goal of Valuevest of fully automating the whole process underlying investment decisions in the future. | 1 |
| 20. Using AI in the investment process exposes Valuevest to possible cybersecurity risk and possible data breaches. | 1 |
| 21. Sensitive/confidential client information is uploaded to an open-access platform; competitors would be able to access this information. | 1 |
| 22. AI would be useful to generate multiple scenario analyses to stress test the outcome of the valuation model applied as well as perform sensitivity analysis in evaluating sensitive variables. | 1 |
| Available | 22 |
| Maximum | 13 |
| <i>Communication skills – logical argument</i> | <i>1</i> |
| Total for part (c) | 14 |
| TOTAL FOR PART I | 47 |