QUESTION 1 **50 marks**

1 Background

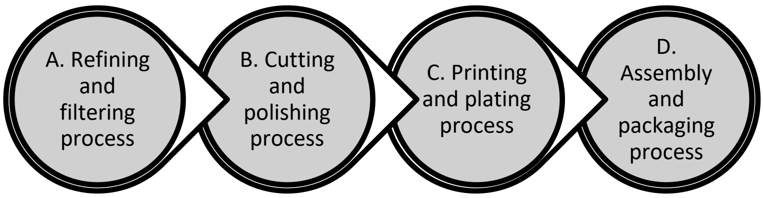
Intellect Ltd ('Intellect') is a South African technology company that manufactures and supplies components for mobile devices. Intellect is registered as a category C value-added tax (VAT) vendor and has a 31 October financial year end.

One of Intellect's core products is a market-leading smartphone silicon microchip ('silicon chip'). There is a significant demand for the chip, with corresponding high gross profit margins. However, margins rapidly reduce upon announcements that new or enhanced product developments or substitutes will become available soon.

2 Manufacturing process

These silicon chips are produced in a fully automated production line, which converts a simple raw material (silica sand), amongst others, into a complex finished product.

Stages in the production process:



A. The silica sand is refined and melted to produce electronic-grade silicon in the form of a purified block, called an ingot. The process of refining the silica sand is extremely energy intensive. It requires approximately 12 kilowatt hours (kWh) to refine a standard kilogram of silica sand, provided high quality silica sand is used.

B. The ingot is sliced into thin wafers and polished to provide the best possible surface for printing and plating.

C. Then a layer of light-sensitive material is spread thinly over each silicon wafer. Microprocessor circuits are then printed onto the silicon wafer, which is next electroplated. This process is repeated several times to achieve compliance with international standards.

D. Finally each silicon chip is packaged in a protective case and a cooling component is mounted on top.

The silicon chips are tested and those that pass the stringent quality controls are packaged for distribution and stored in a secure temperature- and dust-controlled facility.

Power supply challenges and load shedding regularly disrupt the production process.

The company uses a standard costing system where regular variance reports assist management to continuously refine its operations.

3 Standard costing

The production manager has prioritised the analysis of stage A of the production process, where a substantial portion of the total cost is incurred. Raw materials are recorded at standard prices.

The production manager extracted the following information for the management accountant on the budgeted and actual September 2021 production runs:

Budget		
	Quantity	**R**
Silicon ingots, each weighing 100 kg	1 500 units	
Silica sand usage	300 000 kg	3 600 000
Electricity usage	3 600 000 kWh	4 680 000

Actual		
	Quantity	**R**
Silicon ingots, each weighing 100 kg	1 500 units	
Silica sand usage (see note 2)	365 000 kg	3 467 500
Electricity usage (see note 3)	6 935 000 kWh	10 402 500

Notes to the actual production extract

1 Unscheduled load shedding occurred resulting in one entire production batch needing to be re-processed.
2 380 000 kg of silica sand was purchased from a new supplier at R9,50 per kg. The remaining sand at month end was held in raw materials stock and carried at standard prices. The excess volume was purchased to obtain a bulk discount. Due to very limited storage capacity the company did not have any opening stock. No additional silica sand was necessary for the re-processing.
3 This cost is fully variable in nature. At the start of September, the municipality increased the electricity rate to R1,50 per kWh. Intellect has not yet incorporated these new rates into its production budgets. 730 000 kWh of additional electricity (already included in the total kWh noted above) had to be used for the re-processing.
4 The production manager noted that the cost of the re-processing should be analysed separately from the other variances as this was an unavoidable event.

The management accountant accurately prepared the variance analysis of silica sand presented below to the production manager but was unsure how to deal with the electricity variances arising from load shedding.

September 2021: Production cost variance analysis		
		R
Silica sand usage	Unfavourable	780 000
Silica sand price	Favourable	950 000
Total variance	Favourable	170 000

4 Product redesign

The research and development team has been working for two years on a replacement model for the silicon chip to maintain its market-leading status in the industry.

They developed a replacement chip (‘graphene chip’) that uses ‘graphene’ to replace the silicon component, capable of up to double the speed of the silicon chip.

The silicon chip will become redundant once the graphene chip is released at the start of the new financial year (FY2022). The existing stock will have to be disposed of at discounted prices. The closing stock on 31 October 2021 was written down to R4,2 million, as per International Financial Reporting Standards, by the financial accountant.

Due to the rapid advancement in technology and intense competition, management is unsure how to determine a selling price for the graphene chip, based on an expected lifespan of two years. It has estimated the costs associated with the development and production of the graphene chip and proceeds from the anticipated sale of old production equipment, as follows:

Graphene chip costs	**Notes**	**Amount**
		R
Variable production costs per graphene chip	1	151
Fixed costs: annual production and general costs	2	21 000 000
New production equipment required	3	15 000 000
Profit on the sale of old production equipment	4	2 000 000
Research and development costs incurred	5	8 000 000

Notes

1 The variable costs per unit for the production of the graphene chip were reliably estimated during the research and development process.
2 The annual fixed production costs include a portion of the factory warehouse rental, a fixed portion of production expenditure, and other fixed costs. This allocation is considered reasonable and appropriate.
3 The equipment has been sourced and paid and was delivered and installed at the start of FY2022. The equipment will be used for the two-year period and thereafter it is expected to be sold for approximately R9 million.
4 Equipment used for the production of the silicon chips will no longer be required, and will be sold to the supplier of the new equipment, effectively as a trade-in. The equipment had a carrying amount of R3 million in the annual financial statements at 31 October 2021 and was purchased two years previously for R12 million.
5 Research and development costs refer to the amount spent during FY2021 to develop the graphene chip. For tax purposes, the research and development costs of the graphene chip qualifies for a deduction of 150% of the cost incurred.
6 Intellect aims to achieve an after-tax profit of 25% on top of its absorption costing principles.
7 All production equipment is written off for tax purposes in terms of section 12C of the Income Tax Act.
8 Intellect expects to sell 100 000 graphene chips per annum.

5 Factory fire

On 10 October 2021, lightning struck a big tree situated on the factory premises that Intellect leases and set the tree alight. A delivery vehicle parked under the tree as well as two boxes of smartphone chargers, which Intellect also manufactures and which were inside the delivery vehicle, were destroyed. The building also caught alight, but the fire brigade extinguished the fire which resulted in only a broken window, limited paint damage and no structural damage to the building.

Management estimated that it would take the company a couple of weeks to obtain the necessary safety reports before production could recommence. In view of the potential cost implications for Intellect due to a delay in the resumption of production, the general manager of Intellect decided to try to speed up the issuance of the safety reports. The company therefore bought a new cellular phone, with an open market value of R31 199, to give to the chief of the local fire department. The specific objective was to ensure the chief would issue the necessary safety certificate on Monday, 11 October 2021, allowing the company to resume production on the next day. Intellect's financial manager estimated that the one day of lost production cost the company approximately R346 750 in lost profit.

On 11 October 2021, the general manager filed the following claims with Intellect's short-term insurance company:

1 Delivery vehicle: A single cab delivery vehicle, which was acquired second hand on 1 November 2018 at a cost of R552 000 from an unconnected South African non-VAT vendor. Intellect only used the delivery vehicle for the delivery and collection of trading stock.
2 Trading stock: The boxes that were destroyed contained 2 000 units of smartphone chargers. It cost Intellect R150 to manufacture each unit. The selling price per unit amounted to R460 (including VAT). This stock was manufactured during October 2020.
3 Intellect obtained a quote of R14 375 (including VAT) from a local supplier to replace the damaged window as well as a quote of R55 000 (including VAT) from a local contractor to repaint the parts of the factory damaged by the fire. In terms of Intellect's lease contract for the factory, Intellect is responsible for repairs and maintenance, while the lessor is responsible for any damage to the structure of the factory.

The insurance company's assessor reviewed and authorised the following payments and actions on 25 October 2021:

1 The insurance company, in settling the claim, appointed, and paid, its own contractor R57 500 to replace the window and repaint the factory.
2 The insurance contract stipulated that the delivery vehicle should be parked in a safe space after working hours and during weekends. The assessor concluded that this was not the case, and therefore declined to pay this claim.
3 R345 000 was paid to Intellect for the cost of the destroyed trading stock.

On 26 October 2021, Intellect lodged an objection against the decision of the insurance company regarding the delivery vehicle. By 31 October 2021 the insurance company had approved the claim. However, the amount to be settled was still under review.

6 Other relevant information

1 All taxpayers are South African residents and registered VAT vendors, unless otherwise indicated.
2 All amounts exclude VAT unless otherwise indicated or where otherwise defined in terms of the VAT Act.
3 All documentary requirements as per the VAT Act have been complied with.
4 Binding General Ruling No. 7 allows for a four-year write-off period on delivery vehicles.
5 The production of mobile device components is accepted as a process of manufacture by the South African Revenue Service (SARS).
6 All taxpayers will make any available elections to minimise their tax liabilities.
7 Assume a company tax rate of 28% for all periods.

SAICA
THE SOUTH AFRICAN INSTITUTE OF CHARTERED ACCOUNTANTS
develop.influence.lead.

INITIAL TEST OF COMPETENCE, JUNE 2022
PROFESSIONAL PAPER 3

PAPER 3 QUESTION 1 – REQUIRED		**Marks**	
		Sub-total	**Total**
(a)	Discuss all standard costing variances relating to section 3 for September 2021 for Intellect. • Support your answer with calculations, in as much detail as possible. • Ignore VAT for this section of the required.	10	10
(b)	(i) Calculate, using absorption costing principles, a selling price for the graphene chip; and	13	
	(ii) Discuss any other relevant factors that management should consider when setting the desired selling price of the graphene chip. • For part (b)(i) take into account all the relevant tax effects. • For parts (b)(i) and (b)(ii) of the required – o do not prepare a net present value calculation; o ignore inflation and the time value of money; o ignore VAT for this section of the required; and o round all total amounts to the nearest rand.	5	
	Communication skills – presentation	*1*	19
(c)	Discuss, with reference to relevant legislation and case law principles, the income tax implications of the write-down of the closing stock that the financial accountant made for the 2021 year of assessment (see section 4). • Do not provide calculations.	4	4
(d)	Discuss the VAT and normal tax consequences, supported with calculations, of the transactions under section 5 for Intellect's 2021 year of assessment. • Do not address the date of tax payments to SARS.	16	
	Communication skills – clarity of expression	*1*	17
Total for question 1			**50**