

Part (f) Calculate the cost of the cream liqueur chocolate truffles manufactured during the last production week of FY2022.			Marks
Roasting Raw materials	Calculations R9 622,95 + ($\frac{\text{USD}2\,269 \times \text{R}16,95}{1000\text{kg}} \times 750\text{kg}$)	R 38 467,61	0,5 0,5 0,5C
Overheads	$\frac{\text{R}5\,142\,363}{800 \text{ hours}} \times \frac{1000\text{kg}}{20\text{kg}} \times \frac{20 \text{ min}}{60 \text{ min}}$ <i>alternative: 5 142 363 / 48</i>	107 132,56	0,5 0,5
<i>alternative:</i>	$\frac{\text{R}5\,142\,363}{800 \text{ hours}} \times \frac{1000\text{kg}}{(20\text{kg} \times 5)} \times \frac{20 \text{ min}}{60 \text{ min}}$	21 426,51	0,5 0,5
Separation Overheads	$\frac{\text{R}8\,242\,800}{320 \text{ hours}} \times \frac{1000\text{kg}}{150\text{kg}} \times 1 \text{ hour}$ <i>alternative: 8 242 800 / 48</i>	145 600,18 171 725,00	0,5 0,5
<i>alternative:</i>	$\frac{\text{R}8\,242\,800}{320 \text{ hours}} \times \frac{1000\text{kg}}{(150\text{kg} \times 8)} \times 1 \text{ hour}$	21 465,63	0,5 0,5
Proceeds: sale of shells	200kg x R2 966/tonne	(593,20)	1
Refining & grinding Sugar	$800\text{kg} \times \frac{1}{2} \times \text{R}79$	316 731,98 31 600,00	0,5 0,5C
Overheads	$\frac{\text{R}29\,571\,124}{34\,560 \text{ hours}} \times 10 \text{ mills} \times 72 \text{ hours}$ <i>alternative: 29 571 124 / 48</i>	616 065,08	0,5 0,5
<i>alternative:</i>	$\frac{\text{R}29\,571\,124}{34\,560 \text{ hours}} \times 72 \text{ hours}$	61 606,51	0,5 0,5
Pressing Overheads	$\frac{\text{R}1\,998\,689}{72 \text{ hours}} \times 1,5 \text{ hours}$ <i>alternative: 1 998 689 / 48</i>	964 397,06 41 639,35	0,5 0,5
By-product	800kg choc liquor x 50% = 400kg	-	1C
Conching Cocoa butter	$800\text{kg} \times \frac{1}{5,67} \text{ parts} = 141,09\text{kg}$	1 006 036,41 -	1C
Soy lecithin	0,1% x 800kg x R195	156,00	0,5C 0,5C
<i>alternative:</i>	0,1% x (141,09kg + 800kg) x R195	183,51	1C
<i>alternative:</i>	0,1% x 141,09kg x R195	27,51	1C

Overheads	$\frac{R5\,018\,028}{2\,340\text{ hours}} \times 0,75\text{ hours}$	1 608,34	0,5 0,5
Tempering Overheads	$\frac{R11\,807\,704}{2\,064\text{ hours}} \times \left(\frac{941,89\text{kg}}{5,5\text{kg}} \text{ round up}\right) \times 0,25\text{ hours}$	1 007 800,75 245 993,83	0,5 0,5C
		1 253 794,59	
Cream liqueur truffles			
<i>Cost of liqueur:</i>			
Chocolate input	40 000g x 85% = 34 000g		0,5
Number of truffles	34 000g / 10g = 3400 truffles		0,5C
Cream liqueur needed	3400 x (2,5/0,9) = 9 444ml		0,5C
Bottles required	9 444ml / 750ml = 12,6 (round up to 13)		0,5C
Cost of liqueur	13 bottles x R119,20	1 549,60	0,5C
<i>Alternative:</i>			
<i>Bottles required</i>	$9\,444\text{ml} / 750\text{ml} = 12,59$		0,5C
<i>Cost of liqueur</i>	12,59 bottles x R119,20	1 500,73	0,5C
<i>Cost of chocolate:</i>			
Cost per kg of chocolate	$1\,253\,794,59 / 941,89 = 1\,331,15$		0,5C
Chocolate for liqueur truffles	40kg x 1 331,15	53 246,00	0,5C
<i>Conversion cost:</i>	R0,57 x 3 400	1 938,00	0,5C
		56 733,60	1P
<i>Calculation of output: 1 000kg – 200kg shells = 800kg + 400kg of sugar – 400kg cocoa butter removed + 141,09kg cocoa butter added back + 0,8kg emulsifier = 941,89kg</i>			2,5
Available marks			20
Maximum marks			20
Communication skills – layout and structure			1
Total for part (f)			21

Part (g) Discuss the key considerations that should be taken into account when deciding on the purchase of the new Swiss truffle-making machine.		Marks
1.	The current labour-intensive process results in a normal loss of 15% of the tempered chocolate spillage. If the chocolate coating can be mechanised, this spillage could be avoided with a resultant larger output of sellable chocolate . Or, alternatively there could be more spillage in the mechanised process which could lead to a greater loss than the manual process.	2
2.	The board will need to be mindful of the technical support available locally . If such support is not available then Chokaroo will develop a significant dependency risk on the manufacturer of the machine, who is based overseas . Significant disruptions to the production process are therefore possible.	2

3.	Production staff will need to undergo training in respect of the use of the new machine. If the foreign supplier would be willing to provide such training in South Africa , it could be a costly exercise. Furthermore the required skills might not be available in South Africa and the cost to acquire these skills might be material.	2
4.	Currently, the truffle-making part of the chocolate manufacture process is labour intensive, thus providing a number of jobs in an area where the unemployment rate is high . By mechanising the process, a number of jobs will be lost, resulting in an increase in poverty in the area .	2
5.	Further mechanisation can impact negatively on the reputation / legitimacy of Chokaroo amongst its customers and the community. The company could lose customers and hence revenue in the process.	2
6.	Given the continuous load shedding in South Africa, the machine will increase Chokaroo's dependency on Eskom . Currently, staff can continue with most of the truffle-making process during load shedding , given its labour-intensive nature.	2
7.	Mechanisation of the process could result in improved efficiencies . It is likely that the time taken to manufacture truffles will lessen, resulting in cost savings and improving margins.	2
8.	Machine-made truffles will likely all be of a uniform size and uniform quality . The current manual process can result in truffles of different sizes and/or different quality being manufactured, which could lead to customer dissatisfaction . Or, alternatively, the product is not mass-manufactured which makes it unique. Using a machine to manufacture could cause the uniqueness of the product to be lost and potentially leading to loss of customers.	2
9.	There is an exchange rate risk on the purchase of the machine if payment should be delayed and on the future cost of maintenance, seeing that it would be purchased in Switzerland. Therefore, the machine's price and/or maintenance cost could be higher than expected . The company needs to consider hedging against this risk.	2
10.	Consideration should be given to the potential impact on staff morale, reskilling staff and legal costs as a result of the retrenchments.	2
11.	Proper research should be conducted to determine whether there are any other machines available , for example a machine from a local supplier which could save costs i.t.o. training, maintenance , etc.	2
12.	The method of shipment to South Africa should be determined as well as when the ownership of the machine will be transferred to Chokaroo as this will determine which party is liable if the machine is damaged during transit	2
13.	Chokaroo subscribes to the "buy local programme" . Buying a Swiss machine does not align well with the value of "buying local". Similar machines may be available in SA , allowing them to stay true to their commitment to "buy local"	2
14.	A capital budget needs to be prepared, taking into account the purchase cost and maintenance of the machine. The life span of the machine should be taken into account, and cash flows discounted at an appropriate WACC rate. This cost should be compared to the labour cost of manufacturing over the same period of time to see which alternative is cheaper	2
15.	Consideration should be given to how the machine will be financed . The effect of the finance on the optimal capital structure and how it would affect the weighted average cost of capital of Chokaroo should be considered.	2
	Available	30
	Maximum	10
	Communication skills – clarity of expression	1
	Total for part (g)	11
	TOTAL FOR PART II	32

TOTAL FOR THE QUESTION	100
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