

CERTIFIED PUBLIC ACCOUNTANT ADVANCED LEVEL 2 EXAMINATIONS A2.2: STRATEGIC PERFORMANCE MANAGEMENT DATE: THURSDAY, 30 NOVEMBER 2023 MARKING GUIDE AND MODEL ANSWERS

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SECTION A

QUESTION ONE

Marking guide

	Marks
a) i) Calculation of sales price variance of Zahara star	THE THE MENT TOPA
Calculation of sales variance of Zahara super	AR CPARENTEN VEN
calculation of sales volume variance for Zahara star	NORAR OF AR TORS
Calculation of sales volume variance for Zahara super	PARTURAL NO.
Subtotal	4
ii) Material price planning variance	1.5
Material price operating variance	1.5
Subtotal	3
iii) Total hours required if staff were efficient	SERVENDOVENNO LOS
Permanent staff hours.	CPARE ZUBELLINGE
Temporal staff hours	PAR CPARE 2 PER
Labor efficiency variance	2023 ENDOVE TOO
Subtotal	4
Explanations 1 mark for each point	6
	17
(b) Stating that planning variances are uncontrollable	2
(c) Stating that operating variances are controllable Chinese case 1 mark, maximum 3 points	3
(d) Stating that TQM is a continuous process and stating its aim	2
Stating that in precence of TQM there cannot be any variance	ORREDAR DORE
	3
(e) Identify the four key standards	4
(f) Formulation of inequalities 0.5 marks each	4
Drawing the problem on Cartesian plane	
Scale	12023 12023 12023
Plotting	2
Neatness	CPAR 2016ER 1 CPA
(g) Optimum point	PARICPARA 2023 R 22
(h) Calculate maximum contribution	2
(i) Meaning of external benchmarking	2
(j) Steps in benchmarking 0.5 marks for 8 steps	4
(k) Four points for difficulties of benchmarking	4
Total	50

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Models answer

(a)

(i) Sales price variance and sales volume variance

Sales price variance = (Actual price – Standard price) Actual volume

Particulars	Actual price	Standard price	Differenc e	Actual volume	Variance
Zahara super	290,000	350,000	-60,000	750,000	(45,000,000,000) A
Zahara star	330,000	300,000	30,000	650,000	19,500,000,000 F
Total	2023 ER 2023 202 VENI	OPAR AZOZ BER MBER NOV	RICPAR 201 BER	SER NUPAR CPAREN	(25,500,000,000) A

(ii) Sales volume contribution variance = (Actual sales volume –Standard sales volume) Standard margin

Particular s	Actual units	Standard Units	Differenc e	Standard Margin	Variance
Zahara super	750,000	590,000	160,000	180,000	28,800,000,000 F
Zahara star	650,000	590,000	60,000	190,000	11,400,000,000 F
Total	2 OVENOVA 10 2023 2				40,200,000,000 F

(iii) Material price planning variance

Material price planning variance = (Original target price-Actual market price at the time of purchase) Quantity purchased

(FRW60,000 - FRW85,000) 1,400,000=FRW35,000,000,000 A

(iv) Material price operating variance

Material price operating variance = (General market price at the time of purchase-Actual price paid) Quantity purchased

(FRW85, 000 –FRW80, 000) 1,400,000 = FRW 7, 000,000,000 F

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(v) Labor rate variance and labor efficiency variance

Labor rate variance = (Standard labor rate-Actual labor rate) Actual hours worked Total hours required if staff were efficient (650,000*2) + (750,000*1.5) = 2,425,000 hours

Permanent staff work for 2,200,000 hours. The excess 2,425,000-2,200,000=225,000 hours.

Temporal staff worked thrice as long i.e., 225,000*3 = 675,000 hours

Labor rate relates only to temporal staff. Permanent staff are efficient

(FRW14,000 -FRW18, 000) 675,000=FRW 2,700,000,000 A

Labor efficiency variance

Labor efficiency variance = (Standard labor hours for actual production – Actual labor hours worked) Standard labor rate

(225,000 -675,000) * FRW 14,000= FRW 6,300,000,000A

(iv) For each variance calculated above, give one reason of its occurrence

Variance	Reason for occurrence
Sales price variance	Actual price differing from standard price
Sales volume contribution variance	Actual contribution differing from standard contribution
Material price planning variance	Managerial decision-making skills
Material price operating variance	Operational issues specific to a firm
Labor rate variance	Good bargaining power of trade unions
Labor efficiency variance	Motivation or training employees

(b) The total material price variance given is FRW 28,000,000A. The purchasing department will be evaluated on the basis of it. This variance was calculated before computing material planning and operational variance. Breaking the price variance into planning and operational provides a good basis of assessing performance. Planning variances are uncontrollable while operational variances are controllable. Planning variance provides feedback how managers are skilled in making forecasts while operational variance provides feedback how the purchasing department are making decisions.

(c)

China has affordable energy the supports production

Presence of state of art technology

Land is cheap

China labor rates are lower as compared to other places elsewhere

(d) Total quality management (TQM) is a continuous process of eliminating, reducing or detecting manufacturing errors on timely basis, efficient management of supply chain and getting maximum production from employees. Its application will make organizations not to realize any variances.

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(e)

Standards

Ideal standards-standards based on perfect conditions.

Attainable standards-this are standards which can be achieved.

Basic standards-standards which have been in use for a long time.

Current standards-standards based on current working condition

The answer should not include current standards

(f) Formulation of LP model

The objective is to maximize contribution or profitability

Let the number of cakes produced be X

Let the number of cookies produced be Y

Maximize contribution or profit

Z=CMX+CMY

CM is the unit contribution margin of either Cakes or Cookies

CM of cake 5,400-2,800=2,600

CM of cookies 4,900-3,150=1,750

Subject to the following constraints

Zen units available $3X+2Y \le 3.400$

Chan units available $2X + 5Y \le 6,500$

Time available $X+1.2Y \le 1,200$

Non negativity constraint for Cakes $X \ge 0$

Non negativity constraint for cookies Y≥0

Calculation of coordinates

3X+2Y=3,400

2X+5Y=6,500

X+1.2Y=1,200

Solve using any method of solving simultaneous equations: Matrix, elimination substitution methods.

For 3X+2Y=3,400

When X=0, Y=1,700

When Y=0, X=1,133.3

For 2X+5Y=6,500

When X=0, Y=1,300

When Y=0, X=3,250

Give room for mistakes

No room for mistakes.

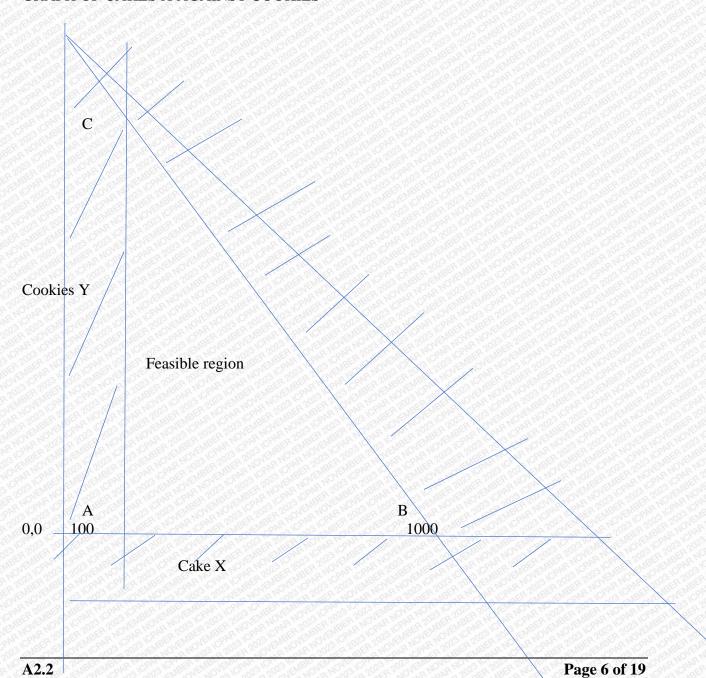
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For X+1.2Y=1200 When X=0, Y=1000 When X=1200, Y=0

Plot the data on a graph paper provide and identify the corner points Zen is non -binding constraint

Zahara Limited

GRAPH OF CAKES X AGAINST COOKIES



(g) and h Calculation of Optimum point and Maximum contribution

A (0;1000) B (1133;0) C (????) 3X+2Y=3,400 X+1.2Y=1,200 3X=3400-2Y X= (3400-2Y)/3 Replace in second formula

(3400-2y)/3+1.2y=1200 3400-2y+3.6y=3600 1.6y=3600-3400 1.6y =200 Y =200/1.6 Y=125

X+1.2Y=1,200 X+(1.2*125) =1200 X=1200-150 X=1,050 C (1050;125)

Replace in objective function Z=2,600X+1,750Y

A (0;1000) contribution is 1,000*1,750= FRW 1,750,000 B (1133;0) contribution is 2600*1133= FRW 2,945,800 C (1050;125) contribution is FRW (1,050*2,600) +(125*1,750) = FRW 2,948,750 (g) Optimum point is C (1050;125) (h) Maximum contribution is FRW 2,948,750

(i) Explain the meaning of external benchmarking

External benchmarking is making a comparison of performance of a firm that represents best practice in an industry. The compared firms are not related in any manner.

(j) Steps in benchmarking

The benchmarking exercise can then be divided into 7 stages.

- Step 1 Set objectives and determine the areas to benchmark –reasons for benchmarking
- Step 2 Establish key performance measures -to support performance evaluation
- Step 3 Select organizations to study –this is a firm that will be compared with your firm
- Step 4 Measure own and others' performance -Conduct performance evaluation
- Step 5 Compare performances -Compare the result of key metrics of comparison

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- Step 6 Design and implement an improvement program -respond to divergences
- Step 7 Monitor improvement -continuous monitoring and evaluation

(k) State the difficulties of external benchmarking

Difficulties of external benchmarking

Its counter-productive, it may lead to resistance to change by employees and management It may stunt innovation-a firm cannot entirely use the benchmarking data obtained to completely design its production and marketing plan

It may lead to complacency-firms may relax on their core competencies and instead map and copy the firm that represents best practice

Some firms are so secretive thus it's difficult to obtain sufficient data or information to be used in benchmarking.

QUESTION TWO

Marking guide

QUESTION TWO	Marks
(a)	
Applying discount on price 0.5 per each tender maximum 1	MEER NOT
Calculation of Discounted Price 0.5 per each tender maximum 1	SER 202 PA TO
Applying discount on cost of sand 0.25 per each tender maximum 0.5	0.5
Calculation of Discounted cost of sand 0.25 per each tender maximum 0.5	0.5
Applying discount on cost of ciment 0.25 per each tender maximum 0.5	0.5
Calculation of Discounted cost of ciment 0.25 per each tender maximum 0.5	0.5
Applying discount on cost of iron sheet 0.25 per each tender maximum 0.5 Calculation of Discounted cost of iron sheet 0.25 per each tender maximum	0.5
0.5	0.5
Calculating total Material cost	PAR 101231
Calculating total Labour cost	JEMBER AR MI
Calculating total cost	OZBER ZOLEPI
Contribution Per Unit	2
Maximum Marks	10
(b) Appicability of customer profitability 1 for each applicability maximum	
	3
c) Reasons for customer profitability	2
D) Stating fremowork	RNOPARICE
Describing the framework	2
Maximum MARKS	3
e) Shadow Price	
Calculating quantity of Cement	2023 ER 201
Calculating quantity of iron sheet	AR NOVER
Contribution without extra cement	2

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Contribution wi	tht extra cen	nent				2
Shodow Price						5PAR 10PA 1
						ENBER NO
Total Marks						25

Model Answer

Analyzing the financial performance of each tender in western and southern provinces

(a)	Southern province	Western province
Quoted Price Frw	30,000,000	35,000,000
Discount Rate	3%	2.50%
Discount	900,000	875,000
Discounted Price	29,100,000	34,125,000
Quantity Built	250	350
Costs	NAP OF AFT 200 EET MEET MOPAS JORAET EN SYLMER	23 CPN 1CT BEH OVE NOV3 1CP PT 3 CO 23 V
Bricks	7,500,000	6,800,000
Sand	2,000,000	2,000,000
Discount Rate for Sand	10%	10%
Discount	200,000	200,000
Discounted Price	1,800,000	1,800,000
Cement	3,850,000	3,100,000
Discount Rate	5%	5%
Discount	192,500	155000
Discounted Price	3,657,500	2,945,000
Iron Sheets	4,000,000	4,500,000
Discount Rate	2.50%	2.50%
Discount	100,000	112,500
Discounted Price	3,900,000	4,387,500
Other Material Costs	500,000	700,000
Total Material Cost	17,357,500	16,632,500
Labour %	30%	30%
Labour Cost	5,207,250	4,989,750
Total Cost	22,564,750	21,622,250
Contribution Per Unit	6,535,250	12,502,750
Contribution Per Tender	1,633,812,500	4,375,962,500

(b) Applicability of customer profitability analysis

- ✓ Production and delivery of product and/or service.✓ Marketing and sales activities.
- ✓ Customer success and engagement activities.
 ✓ Salaries and operational costs.

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(c) Reason for conducting customer profitability analysis

Customer profitability analysis can aid in decision making. Before accepting any tender from a client, Kajuga Construction Limited can undertake this analysis so as to make a decision of accepting or rejecting. This can also help identify the most profitable customer.

(d) Description of a balanced score card (BSC)

Balanced scorecard

This is an approach to performance management that focuses on performance based on four major perspectives. It applies both financial and non-financial performance indicators.

These perspectives include Financial, customer, internal business, and innovation and learning perspectives.

The leaner should explain each perspective in detail

(e) Advice on the value the shadow price

Formulation of inequalities
The aim is to maximize the contribution
Let X be number of kitchens built in Southern province
Let Y be the number of kitchens built in Western province.

Z=CMX +CMY

CM is the unit contribution margin of kitchen either built in Southern province or Western province.

Z = 6,535,250 X + 12,502,750 Y

Subjected

Quantity of cement for southern province =Total discounted price / Price per unit = 3.657.500/12.500=292.6

Quantity of cement for western province =Total discounted price / Price per unit =2,945,000/12,500=235.6

Quantity of iron sheet for southern province =Total discounted price / Price per unit = 3,900,000/8,000=487.5

Quantity of iron sheet for western province =Total discounted price / Price per unit =4,387,500/8,000=548.4

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Subject to the following constraints Bags of cement 292.6 X +235.6 Y \leq 10,000 Iron sheets 487.5 X +548.4 Y \leq 9,000

292.6 X +235.6 Y=10,000 487.5 X +548.4 Y=9,000

X=(10,000-235.6y)/292.6

Replace value of X in equation 2

- =487.5*(10,000-235.6y)/292.6)+548.4Y=9,000
 - > (487.5*10,000-487.5*235.6Y)=(9000-548.4Y)*292.6
 - ➤ 4,875,000-1148,667.8Y=2,633,400-160,461.84Y
 - ➤ 4,875,000-2,633,400=- 160,461.84Y +1,148,667.8Y
 - > 2,241,600=988,205.96Y
 - Y=2.2683

Replace y in 292.6 X + 235.6 Y = 10,000

- > 292.6 X+534.41=10,000
- > 292.6 X=10,000-534.41
- X = 9465.59/292.6
- ➤ X=32.35

Z= 6,535,250 X + 12,502,750 Y Z = (6,535,250 * 32.35) + (12,502,750*2.2683) Z = 211,415,337.5+28,359,987.825 Z=239,775,325.325

Let's adjust the available cements by one bag to 10,001 and reformulate our equation and solve it.

292.6 X +235.6 Y≤10,001 487.5 X +548.4 Y≤9,000

292.6 X +235.6 Y=10,001 487.5 X +548.4 Y= 9,000 X=(10,001-235.6y)/292.6

Replace value of X in equation 2

- =487.5*(10,001-235.6y)/292.6)+548.4Y=9,000
 - \rightarrow (487.5*10,001-487.5*235.6Y) =(9000-548.4Y) *292.6
 - > 4,875,487.5-1148,667.8Y=2,633,400-160,461.84Y
 - ➤ 4,875,487.5-2,633,400=- 160,461.84Y +1,148,667.8Y
 - > 2,242,087.5=988,205.96Y

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> Y=2.26885

Replace y in 292.6 X +235.6Y=10,001

- > 292.6 X+534.54=10,001
- > 292.6 X=10,001-534.54
- X = 9466.46/292.6
- ➤ X=32.35

Z= 6,535,250 X + 12,502,750 Y Z = (6,535,250 * 32.35) + (12,502,750*2.26885) Z =211,415,337.5+28,366,864.3375 Z=239,782,201.837

Shadow Price = 239,782,201.837-239,775,325.325=6876.512 Is the shadow price of cement

Shadow price is the contribution earned from having one extra unit of limited resource available and is also the extra, on top of the existing cost for that limited resource, which a company would be willing to pay to acquire that extra resource.

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QUESTION THREE

Marking Guide	MARKS
(a)	
Material Price Variance	2
Material mix Variance	2
Material Yield Variance	2
Overhead expenditure Variance	2
Overhead capacity Variance	2
Overhead efficiency Variance	2
Maximum Marks	12
(b)	
Activity usage variance Delivery	\sim
Activity usage variance Dispatch	MENENCY CONTROL 2
Activity expenditure variance Delivery	2
Activity expenditure variance Dispatch	2
Maximum Marks	8
c) Step in calculating Material Mix Variance 1 for each Step	THE REPORT OF THE PROPERTY OF
Total	25

Model Answer

a)

Calculate standard cost of	materials per kilog	gram of output	WEEL WEEL OF WAS CONFERENCE ON SERVICE	PR JO
Materials	Weight	Cost per KG	Weighted Cost	EMBER
E PART MEETING AT NOTIFICATION	0.6	40,000	24,000	23 ER 20
FORM HOLEN SOLDER SOLDER AND ARE CO	0.25	60,000	15,000	40/53
G or the of thousand the	0.15	25,000	3,750	PUENE
Standard material cost po output	er kilogram of	PER MOVER NOW SOLD SOLD SOLD SOLD SOLD SOLD SOLD SOLD	42,750	OPAR EMBER EMBER
1. Material price variance =	= (Standard Price-	Actual price) Actu	lal quantity	OP TOPAL
Actual cost of output	SERVICE OF THE STATE OF THE STA	ME ENERGY CREEK	SHELLER STATE OF THE STATE OF TO SELECT	CP 223
Material	TOUS POSSES SOUNE HO PAR CPA	ER ? NEER ? NEER NOVAR NO	203,800,000	NEWICE
CPAR CPREP TEMBER INTO PER 10PT 10PT	NEW ALTON DE SOS SOS SENT	401, 40, 310, 505, 50 AE	203,800,000	NBER
Material	Standard price	Actual quantity	VENEROUS ROLL SE PRESENTATION DE LA COMPANION	BER 202
EPRES CENTRE ENDOUGHOUS CENTRES OF THE SECOND SECON	40,000	2,840	113,600,000	CPA
Fine AR NORTH CRAFTEN BELLING OF AR	60,000	1,210	72,600,000	SAL IC
G	25,000	860	21,500,000	505 AL
Total standard price	2012 SOUNE WORK SOES	ER SEER MOPAR CPARES	207,700,000	23 OF

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Material price variance	BERNBER NICPARIOP	3E VENDOVENDO AR 302	3,900,000 F	NE HOLE NOVER
53 C 58 C C VEW ONE W 353 C 58 C 50 C 58 C 68 C	STENONE CLUSS CON	TOPHER 20 BEET MEET TO	CAR CHEER ENBYENCEARS	CA 3 10 PER CABLIFOR
2. Material mix variance equactual quantity in standard i			nix at standard pr	ice less
Material	Actual quantity in actual mix	Weight	Actual qty in standard mix	ASE WELVENE VENEZA SOSTA S
3 TEMPO E HOVE 10 P 20 2 R 20 2 STEM HOVE 10 23	E	Panethan Pane	G	Total
Actual quantity in actual mix	2,840	1,210	860	4,910
Standard mix of input	0.6	0.25	0.15	TO NOVE HOUSE
Actual qty in standard mix	2,946	1,227.50	736.50	4,910
Difference	106	18	- 124	PAF NOPATION ERROR
Standard cost per KG	40,000	60,000	25,000	23 2223 2023 VEM
Variance	4,240,000	1,050,000	- 3,087,500	2,202,500
Comments	Favourable	Favourable	Adverse	Favoura ble
3. Material yield variance	(Actual yield-of output	Standard yield)	Standard material c	ost per unit
Material	Actual quantity in actual mix	Weight	Actual qty in standard mix	
E. K. M. L. L. C. L. C. S. S. S. S. S. S. L. W. L.	E	F	G	Total
Actual quantity Total Input	2,840	1,210	860	4,910
Should Produce (4910/(0.60+0.25+0.15)	PARTON OF AREAS OF A STATE OF A S	ENDER OF A LOPE	CONTROVERSON CONTROL OF STREET OF ST	4,910
But did produce	100/3/CP 2023 12023/EM	NOAR 2023ER MEER A	ORR CPACE NIBER NIBER N	4,200
Difference	SENOVENOPRAZ VENOPRAZ	MENDOVENOVER CORS	NOTE TO SEE TO S	710
Standard Price	AR OPAR ROOM BERMER	R NOVAR TOPAR 202 ER	N SEAR WORK COMBER TEMBER	42,750
Variance				- 30,352,50 0
Comments	Adverse	Adverse	Adverse	Adverse
4. Overhead expenditure var less actual cost	iance equals bu	ıdgeted cost	A TORRESON OF THE REAL PROPERTY OF THE PROPERT	AT PER LANGE IN STREET OF THE PROPERTY OF THE
Budgeted overhead cost	CHEER LEMELEN OF ARE	10 FRIDAR 2022 FRIDA	120,000,000	AN CP NO AR CP
Actual overhead cost	78,000,000	48,000,000	126,000,000	EN 29 2023 12023 VENI

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Overhead expenditure variance	BET NEW AT TO PA	A CENTER TEMBER THO PAR OVER TO PAR NO 2023 EFF TO 10 TO 023 (NOT ONE NO 201)	-6,000,000	Adverse
	PREPENDENCE	A CONTRACTOR OF THE CONTRACTOR	CT I	18 10 1 10 10 10 10 10 10 10 10 10 10 10 1
5. Overhead capacity variand multiplied with SOAR per ki		idgeted input o	of E less actual input	SER DEER ANOVEN
Calculate standard overhead rate	10 01 E	A 2013 CHE WE HE HOLE		POSER POER INC.
Budgeted overhead	25052 500 AEWAN	ONE NO PER PUBER NO	120,000,000	BER ENBERENBER
Budgeted standard quantity of E	4,000	0.6	2,400	REPORTED OF THE PERSON OF THE
OAR	2 NO 23 L 20 ER Z	HOVER CPART ZOZER Z	50,000	O 123 EMBER OVER
Budgeted overhead	ONE HOUSE ROOM	ER NO AR NEAR TOOK	120,000,000	PAR CPAN ICHBER
Budgeted standard quantity of Zed	PAR OP ATER ZURET 2023 VENIER ZURET 2023 VENIER OF NO	THE SER AND ARE	4,000	18 FEMBER RICPA
Standard overhead rate per kilogram of Zed	PER 2023 VENEROVE BER 2023 VENEROVE	110012 CP 2023 2020 16 12 12 10 12 12 12 12 12 12 12 12 12 12 12 12 12	30,000	1022 FR 2025 1012 MOVEMBER 2023 1012 MOVEMBER 2023
Budgeted production	245 18E 1 W CON	AEMANO BAOS A SON	4,000	CPAR CPAR 2016EN
Proportion of input material E	ENEVENDER 2023 C	2023 LE BENENNOVENO 2023 LE BONENNOVENO 2023 LE BENENNOVENO 2023 LE BENENNOVENO 2024 L	0.6	02 VEN HOW HO 14 OPAR OPAR R 23 VEN BOVE 23 VEN BOVE
Budgeted input material E	ANOVE NOVER 2023 ER 21	BER AND VER NO RAR AZO	2,400	SE R NO PAR ICPI
Actual input material E	310, BELLENMANE	1055053 5053 ENLYONE	2,840	P BER NOVAR
Difference	CPAR ICPAIR VENIE	NEWS VENE COST ENE	-440	023 CH 2023 2020
SOAR	R NOVAR NOAR	202 ER MEER MUPAR	50,000	EMIONEWICEURS 10
Overhead capacity variance	2023 202 VEN NO MEER NO PAR ICE MCPAR 23 2023 VEN	ARRADISER 2002 REVIOLENCE PARTICIPATE IN CONTROL OF THE PARTICIPAT	- 22,000,000	Adverse
6. Overhead efficiency variar multiplied with SOAR per K		tandard quan	tity of E less actual qua	nntity
Standard quantity	4200	0.6	2,520	OF RENOVEM NOW
Actual quantity	22 ENDOY NO.	STORY OF THE RESERVENCE	2,840	SEL MBEUS MONEY
Difference	3 CPP 3 CPBE FEN	ROVERN PAR AND AND REP NOVER PROPERTY OF AREA	320	NEW YORK TO STATE OF THE PARTY
OAR	S 2023 R 202 VEW M	OVE NO 23 SER MER 20	50,000	NE RENEWENDEN
Overhead efficiency variance	JEMOPAR 1023 (OP)	AR OPART 2023 FROM THE NEED OF	16,000,000	Adverse

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(c)

- ✓ Take the total actual quantity of materials used
- ✓ Divide the total quantity of materials into standard mix
- ✓ Calculate the mix variance-difference between actual quantity used and the quantity in the standard mix.
- ✓ Convert the mix variances into money by applying the standard price
- ✓ Sum the individual mix variances to arrive at the total material mix variance.

QUESTION FOUR

a) Calculation of ROI	2
b) Calculation of RI	2
c)Comment on ROI (0.5 for new combined traceable Profit, 0.5 for combined	
investment and 1 for ROI and 1 for comment	3
d) Explanations on environmental costs 1.5 marks, maximum 3	3
e) Calculating NOPAT for two years	2
Calculating capital employed for two years	2
Calculating WACC for two years	2
Calculating EVA for two years	2
Maximum	10
f) Calculating ROI	2
g) calculating RI and comment	3
Total	25

Calculation of traceable profits

(a)	Soft Drink D	Liquor Division		
	2022	2021	2022	2021
Revenue	103,000	100,000	140,000	125,000
Controllable costs	59,000	57,000	70,000	66,000
Traceable costs	13,000	12,000	31,000	16,000
Apportioned head office costs	17,000	14,000	21,500	18,000
Divisional profits	14,000	17,000	17,500	25,000
Add apportioned head office costs	17000	14000	21500	18000
Traceable profits	31000	31000	39000	43000
Net investment	185,000	125,000	275,000	265,000
ROI	17%	25%	14%	16%

(b) Residual income (RI)

ROI=Traceable profits/Net capital investment * 100

RI=Divisional profits-Imputed interest charge.

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Imputed interest charge = Net capital investment * weighted average cost of capital

RI	Soft Drink Division		Liquor Division		
	2022 "Million"	2021 "Million"	2022 "Million"	2021 "Million"	
Traceable profits	31,000	31,000	39,000	43,000	
Net investment	185,000	125,000	275,000	265,000	
WACC	0.125	0.125	0.125	0.125	
Imputed interest charge	(23,125)	(15,625)	(34,375)	(33,125)	
RI	7,875	15,375	4,625	9,875	

(c) Comment of new investment

FEFT HEET RIVERY OF HEET KIND FAND OF AND SON	2022 "Million"	2021 "Million"	2022 "Million"	2021 "Million"	TOTAL
Total traceable profits	31,000	31,000	39,000	43,000	144,000
Sales of new product	2053 5053 JENEVA	F 70013 10, 5053 505	OF NOVE NO 2023 ER	45,500	F 2018ER MEER
Less specific operation costs	50,000	0.805	5053 TEMBLARMON	40,250	ON NO 2023 10 201
Profit generated from sale of new product	BERNBER NO AR	CPAER ZNBERNBE ENDEVENDOUGH	AN CPAN CHER KURN 123 CPAN KINE KURN BER NO PAR CPAR	10 VEW CPA'S 10 13 10 13 10 10 13 10 10 10 10 10 10 10 10 10 10 10 10 10	5,250
Total traceable profits	ONEWPONENCE VIEW	OS3 TEMBENENON	3 Charles More Market	BE EMPTE SEEDS	149,250
Existing investment	185,000	125,000	275,000	265,000	850,000
Add cost of the new machine	OZSIENDOVENOVENOVENOVENOVENOVENOVENOVENOVENOVEN	A SOS SOS SOS SOS SOS SOS SOS SOS SOS SO	R NO 2023 ER 2015 ER R RELIGIONEM OVEN CRAFI NO 12 NO 123 C 202	OVAR NOAK CPAR CPAR 3 CP3 CPARED VEND R 2 2 OVER NOAR	50,000
Total investment	SER NOVARIOPAR	MEERNBERRE	3 CPREPENSIVENE	AR ICH 3 TEMBE	900,000
Calculate the new ROI	6 5050 SOLVENIO	R H 2023 ER 208 ER 2	PAR CPAR 2018E	MEER NOPAH CPA	17%

The current ROI is 16%. The recalculated ROI is 17%. There is an increase. Proceed with the new investment. Overall, Bulawayo's profits will increase due to the new product launched

(d) Environment costs include;

Environment –related costs-this can be directly traced Environment driven costs-are costs hidden in the overall overhead of a firm

YEAR	2022	2021
DE SOS NEW HOLE BOOK SEE SOS EN PONTE POR SEE SOS EN PORTE SE SOS EN PONTE SE SOS EN PONTE SE SOS EN PONTE SE S	FRW 000	FRW 000
Operating profit	6,500,000	5,500,000
Add research cost expensed (Project Z)	500,000	500,000

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STATE HOUSE STATE SPEEL HOUSE LAND WE LAND STREET HERE HE HOUSE HOUSE HUNG THE WAS COLUMN.	CHIEVENIOVER CPROS 20	JEMBER ENBERNING
Less amortisation of prior year expenses (Project X)	750,000	750,000
Add expenses relating to increase in allowance for doubtful	NO PAR OPAR A 2023 EN 201	
debts	100,000	50,000
Add non cash expense	15,000	15,000
less interest expense	1,000,000	900,000
Profit before tax	5,165,000	4,415,000
Less cash taxes W1	1,664,550	1,435,050
NOPAT	4,670,450	3,749,950
Working 1	NE NOVE WOODS TO SEE TO	NOVAR NO AR 201 AE
Calculating net tax	R POPAR ICPAR 20 BERNE	PAR NCPAT CPAER
Operating profit as per EVA	6,165,000	5,315,000
less interest expense	1,000,000	900,000
Profit before tax	5,165,000	4,415,000
Tax rate	0.27	0.27
Tax charge as per income statement	1,394,550	1,192,050
Add tax relief on interest (Interest * tax rate)	270,000	243,000
Cash taxes	1,664,550	1,435,050
Calculation of Adjusted capital employed as at 1 January	2022	2021
Capital as at 1 January per statement of financial position	37,000,000	33,500,000
Less Allowance for doubtful debts	250,000	300,000
Add capitalization of research and development costs	0	0
Project Z	500,000	0
Project X	750,000	1,500,000
Adjusted capital employed as at 1 January	38,000,000	34,700,000
Weighted average cost of capital (WACC)	23 YOZ3 JEMPOVE NOV3 G 3EP R NOPAR I CHEEP ZUBER	NESER CONELLINONE
PRINCE TO BE TO BE TO THE TO THE TO THE TO SELECT OF THE TO THE T	2021	2022
Cost of Debt -Pre tax	5%	5%
Tax Rate	27%	27%
After tax cost of Debt	4%	4%
Weight of debt	40%	40%
Cost of equity	12%	14%
Weight of equity	60%	60%
WACC	8.7%	9.9%
EVA	2022	2021
NOPAT	4,670,450	3,749,950

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CAPITAL	38,000,000	34,700,000
	50,000,000	5.,,,,,,,,,

f)

ROI=Operating profit (PBIT)/Capital employed * 100	2022
PBIT	6,500,000
Capital employed	38,000,000
ROI is	17%

Calculating RI for year 2021

RI is Net operating Income (NOPAT) less imputed interest charge	RICPAR 2023ER MEEN NO
Profit before tax	5,500,000
Tax	1,485,000
Profit after tax	4,015,000
Capital	34,700,000
WACC	8.70%
Imputed interest charge	3,018,900
RI COM CONTROL OF COMMENTS OF	996,100

Muzehe Ltd will remain with 996,100 million after paying the cost of acquiring capital to purchase operating assets

END OF MARKING GUIDE AND MODEL ANSWERS

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