CERTIFIED ACCOUNTING TECHNICIAN

STAGE 3 EXAMINATIONS

S3.2 MANAGEMENT ACCOUNTING

DATE: THURSDAY, 29 APRIL 2021

INSTRUCTIONS:

1. Time allowed: **3 hours.**
2. This examination has **three** sections: **A, B and C.**
3. Section A has **10** multiple choice questions equal to **2Marks** each.
4. Section B has **2** questions equal to 10 marks each.
5. Section C has **3** questions equal to 20 marks each.
6. All questions are compulsory.

SECTION A

1 The following statements have been made about the objectives of a budgetary planning and control system:

(i) A budget sets out the long-term objectives of the organisation in financial terms.
(ii) A budgetary planning and control system will not motivate employees.
(iii) Budgets can be used to evaluate the performance of a budget holder.
(iv) Control is achieved by comparing actual results against the budget and taking corrective action.

Which of the statements is/are correct?

A (i) only
B (iii) and (iv) only
C (i) and (ii) only
D All of the above
E None of the above

(2Marks)

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2 Sentwali Ltd manufactures three products. The variable costs and demand for each product are as follows:

	Product 1	*Product 2*	*Product 3*
	Frw	Frw	Frw
Material A	4,000	6,000	8,000
Material B	3,000	0	4,000
Labour	1,200	600	1,800
Demand per week	2,000	1,000	3,000

The cost of materials and labour, and the maximum availability per week are as follows:

	Cost	*Maximum availability*
	Frw	Kg
Material A	2,000 per kg	20,000
Material B	1,000 per kg	15,000
Labour	600 per hour	15,000

Which of the following is the limiting factor for Sentwali Ltd?

A Demand
B Labour
C Material A
D Material B
E None of the above **(2Marks)**

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3 Which of the following statements about the use of attainable standards in standard costing is/are correct?

(i) Some improvement from current performance is included in the standard.
(ii) No allowance is made for wastage and inefficiencies.
(iii) Staff will be motivated as the standards are achievable.
(iv) They are useful for comparing the performance of the company over time.

A (i) only
B (ii) and (iv)
C (i) and (iii)
D (ii) only
E None of the above **(2Marks)**

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4 A company which manufactures fashion items for young people has used regression analysis to identify the relationship between its sales and the number of people aged between 15 and 20 in Rwanda. It wishes to use this analysis to forecast future sales as reliable information about future changes in the population is available.

(i) Regression assumes that the relationship between sales and the number of people is linear which may not be correct.
(ii) The dependent variable in this example is sales.
(iii) The regression may not forecast future sales accurately.
(iv) Sales may depend on other factors that are not taken into account in this regression analysis.

Which of the above statements is/are false?

A (i) only
B (iii) and (iv) only
C (i) and (ii) only
D All of the above
E None of the above

(2Marks)

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5 Last month, a mine budgeted to sell 100 tonnes of tin at a price of Frw 16.3 million per tonne. Actual sales were 95 tonnes giving a total sales revenue of Frw 1,472.5 million.
What was the sales price variance for last month?

A Frw 76.0 million adverse
B Frw 76.0 million favourable
C Frw 80.0 million adverse
D Frw 80.0 million favourable
E None of the above

(2Marks)

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6 A large company is split into several different types of responsibility centre as follows:

(i) Investment centres
(ii) Cost centres
(iii) Profit centres
(iv) Revenue centres

For which of the above responsibility centres would return on capital employed be an appropriate performance measure?

A (i) only
B (ii) and (iv)
C (i) and (iii)
D (ii) only
E None of the above

(2Marks)

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7 Last month, a company made a profit of Frw 10 million. The company uses absorption costing, where the cost per unit includes fixed overheads absorbed at a rate of Frw 2,000 per unit. There were 100 units of finished goods in inventory at the start of the month, and 300 units at the end of the month.
What would the profit have been if the company had used marginal costing?

A Frw 10.4 million
B Frw 10 million
C Frw 9.6 million
D Frw 9.2 million
E None of the above

(2Marks)

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8 A manufacturing company has a budgeted fixed overhead absorption rate of Frw 3,000 per unit based on budgeted production of 500 units per month.
Last month, actual production was 600 units. Total fixed overhead was Frw 1.6 million.
What was the fixed overhead expenditure variance last month?

A A favourable variance of Frw 200,000
B An adverse variance of Frw 200,000
C A favourable variance of Frw 100,000
D An adverse variance of Frw 100,000
E None of the above

(2Marks)

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9 In 2017, a manufacturing company paid its direct labour at a rate of Frw 500 per hour. In 2019, the rate had risen to Frw 600 per hour. The Consumer Price Index (CPI) in 2017 was 165.4 and it had risen to 215.02.
In real terms, compared to 2017, labourers in 2019 are:

A No better or worse off
B 7.7% better off
C 20% better off
D 56% better off
E None of the above

(2Marks)

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10 A company is reviewing its controls over the booking of receipts from credit customers. The company is concerned that the cashier, who records the receipts may be 'teeming and lading', whereby some receipts are stolen by the cashier, who hides the crime by booking later receipts against the invoices of the customer whose cash has been stolen. The following controls have been suggested:
(i) Segregation of duties between the booking of invoices and the booking of cash receipts
(ii) Regular communication with customers by the financial controller, asking customers to confirm their balances
(iii) Reconciliation of bank statements to the balance in the accounting system
(iv) Segregation of duties between the booking of cash receipts and the debt collection function.
Which of the above would reduce the risk of teeming and lading?

A (i) only
B (ii) and (iv)
C (i) and (iii)
D (ii) only
E None of the above

(2Marks)

SECTION B

11 Mugwaneza owns a carpentry shop that produces high quality garden furniture. His budgeted sales for October to January are as follows:

	October	*November*	*December*	*January*
Sales (units)	850	700	300	300

Mugwaneza aims to have enough inventory of finished goods at the end of each month to meet 75% of the following month's budgeted demand. At the start of October, there were 638 units of finished goods in inventory. Mugwaneza is a perfectionist and inspects all completed items of furniture. On average, he rejects 5% of the finished products, which are then scrapped.

32 craftsmen are employed by Mugwaneza and each unit requires 10 labour hours. He pays them a standard rate of FRW 600 per hour and guarantees that they will be paid for a minimum of 160 hours' work per month. If they work more than 160 hours per month, they are paid a premium of 50% on the standard rate for the hours above 160.

Required:

Prepare the monthly production budgets and monthly labour budgets showing labour hours and labour cost for October, November and December. (10 Marks)

(Total :10 Marks)

12 The Private and Commercial Peoples Bank (PCPB) provides banking services to both retail customers and small businesses, including bank accounts and loans. The banking sector in Rwanda is becoming increasingly competitive and, recently, PCPB has been losing customers to competitor banks.

The management accounts of the bank for the year just ended show the following:

	Frw million
Interest income	700
Less interest expenses	(150)
Net interest	550
Other fees	180
Total income	730
Less impairment of loans*	(100)
Administrative and operating expenses	(600)
Operating profits	30

*Impairment of loans is the amount of bad debts that PCPB had for the year

The executive committee of the bank have proposed a total quality management programme to stop the loss of customers and increase the bank's profits. The plan involves the following:

1. Spending Frw 20 million on training managers and staff on providing excellent customer service
2. Spending Frw 5 million on improving the internet banking website, after complaints from customers that the existing website is difficult to use
3. Spending Frw 10 million on increasing the number of ATM machines in the country, making it easier for customers to make cash withdrawals

The executive committee believe that this will lead to an increase in total income of 2% per year, each year for at least five years. Most of PCPB's costs are fixed, and variable costs are estimated to be 10% of income. Assume that without the programme total income would remain unchanged.

In addition, the management are considering investing FRW 2 million on better credit control systems, which they believe will reduce the cost of bad debts by 25% per annum.

Required:

Evaluate the proposed plans of the executive committee from both a financial and non-financial perspective. (10 Marks)

(Total:10 Marks)

SECTION C

13 Best books runs a chain of bookstores throughout Rwanda. The objective of the company is to establish a well-known brand in Rwanda, and to grow profits over the longer-term.

Each store manager is given an annual budget, which is prepared by the finance department at head office, and the manager is assessed based on how he or she performs in relation to that budget. Store managers do not currently have any participation in the preparation of the budget.

The budget and actual performance for one of the stores was as follows:

	Budget	*Actual*	*Variance*
	Frw '000	Frw '000	Frw '000
Sales	12,000	12,500	500
Cost of sales	(7,500)	(8,100)	(600)
Gross profit	4,500	4,400	
Staff costs	(720)	(700)	20
Marketing	(600)	(600)	0
Rent and premises costs	(550)	(600)	(50)
Budgeted profit	2,630	2,500	

Mr Nkesharurema, the manager of this store was told that he would not be given a pay rise for the following year, because his store did not meet its budgeted profits. He does not feel that this is very fair. He tells you:

My sales were Frw 500,000 higher than the budget, which is 4% better. That was actually a good performance in my city, which has a low rate of employment. The cost of sales was higher due to price increases in the wholesale market. That was not my fault, as I am just charged by head office for the cost of the books that I order from them!'

On further investigation, you discover the following facts:

1. Sales prices for all books are set by head office, and the store managers may not offer discounts to customers without authorisation by head office.
2. All books are ordered by head office, based on requisitions sent by each store.
3. Staff costs include the cost of the store manager's salary, plus the salary of one assistant. The store manager has discretion over how many hours staff work.
4. Head office sets a marketing budget, which is the maximum that each store can spend. Stores can spend less than this if they wish.
5. Rent and premises costs are dealt with by the property department which is based at head office.

Ms Rutaremara has just been appointed as finance director at Best Books. She has been reviewing the system of budgets, and has asked for your opinion on the current system. She is also considering allowing the store managers to participate in the preparation of their budgets in the future.

Required:

(a) **Discuss which variances above should be taken into account when assessing the performance of the store managers.** (8 Marks)

(b) **Discuss the possible impact of the budgetary system at Best Books on the behaviour of the store managers.** (6 Marks)

(c) **Advise Ms Rutaremara on the advantages and disadvantages of store managers participating in the setting of their own budgets.** (6 Marks)

Total (20 Marks)

14 Hotel Romantique is a small three star hotel in Kigali. It has 10 double rooms and is open for 365 days of the year. The Hotel also has a small restaurant that provides breakfast for guests, and is open to the public for dinner. The Hotel is privately owned. Summary management accounts for the last two years are as follows:

	Year ended 31 December 2019	*Year ended 31 December 2018*
	Frw'000	Frw'000
Revenue – accommodation	104,244	97,294
Revenue – food and drink	85,200	79,520
Total revenue	189,444	176,814
Cost of sales	(90,933)	(84,871)
Gross profit	98,511	91,943
Administrative expenses	(41,677)	(33,595)
Operating profit	56,834	58,348
Average occupancy	70%	68%

Non-financial information

	2019	2018
Average score on booking website (Out of 5, where 5 is excellent)	3.5	4.4
Website conversion rate:	15%	20%
Average scores on guest feedback forms 4 (Out of 5 where 5 is excellent)	3	4.5
Staff turnover (% of staff leaving)	20%	10%

The management accountant has managed to obtain some statistics about market averages for similar hotels in Kigali as follows:

Average room revenue received per occupied night	Frw38,000
Average revenue received per available room	Frw27,000
Operating profit per available room	Frw15,000 (includes operating profit from food and drink)
Occupancy	71%

Inflation in Rwanda was 3.1% in 2019.

Required:

(a) **Assess the financial performance of the Hotel Romantique for the year ended 31 December 2019.** **(**12Marks)

Note. In part (a), a maximum of five marks will be available for calculations.

(b) **Assess the non-financial performance of the Hotel Romantique for the year ended 31 December 2019.** (8 Marks)

Total (20 Marks)

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15 Big Drills Ltd manufactures drill parts for use in the mining industry. The company makes three versions of its drill part as follows:

	Basic	*Standard*	*Super*
Selling price per unit (Frw)	20,000	30,000	45,000
Materials cost per unit (Frw)	10,000	16,000	30,000
Labour hours per unit	2	2.5	4
Maximum demand (units) per week	200	250	100

Labour is paid at a rate of Frw 700 per hour. Variable overheads are incurred at a rate of Frw 1,000 per labour hour. Due to a shortage of labour with the appropriate skills, labour is limited to 1,125 hours per week.

Fixed overheads of Frw 2 million are incurred each week.

Required:

(a) **Calculate how many units of each product should be made per week in order to maximise profits, and calculate the value of the profit per week.** (10 marks)

(b) **Suggest two ways in which the labour shortage above might be overcome in the short run and briefly explain the feasibility of your suggestions.** (4 marks)

(c) The production of the Super requires a special production process, which increases Big Drill's fixed overhead costs by Frw 500,000 per week. The production manager has questioned whether it is worth producing the Super, given the low production volumes.

The sales manager has pointed out that Big Drills must continue to sell the Super to keep customers satisfied, but has agreed that the Super could be bought in from another manufacturer. He also notes that demand for Super is falling.

Another company, Flexi Co has indicated that they could produce the Super Drill for a price of Frw 43,000. If Drill Co buys in the Super from Flexi Co, then fixed overheads of Frw 500,000 per week would be saved.

Required:

Calculate the impact on Super drill's profits of buying in Super from Flexi Co at the current level of sales, and calculate at what level of sales the total costs of making the Super would be the same as buying in. (6Marks)

Total (20 Marks)

FORMULA SHEET GIVEN IN THE EXAM

Regression analysis

y= a + bx

$$a = \frac{\sum Y}{n} - b\frac{\sum X}{n}$$

$$b = \frac{n\sum XY - \sum X \sum Y}{n\sum X^2 - (\sum X)^2}$$

$$r = \frac{n\sum XY - \sum X \sum Y}{\sqrt{[n\sum X^2 - (\sum X)^2][n\sum Y^2 - (\sum Y)^2]}}$$

PRESENT VALUE TABLE

Present value of FRW 1 ie $(1+r)^{-n}$

where r = interest rate

n = number of periods until payment

Periods	**Discount rates (r)**									
(n)	**1%**	**2%**	**3%**	**4%**	**5%**	**6%**	**7%**	**8%**	**9%**	**10%**
1	0.990	0.980	0.971	0.962	0.952	0.943	0.935	0.926	0.917	0.909
2	0.980	0.961	0.943	0.925	0.907	0.890	0.873	0.857	0.842	0.826
3	0.971	0.942	0.915	0.889	0.864	0.840	0.816	0.794	0.772	0.751
4	0.961	0.924	0.888	0.855	0.823	0.792	0.763	0.735	0.708	0.683
5	0.951	0.906	0.863	0.822	0.784	0.747	0.713	0.681	0.650	0.621
6	0.942	0.888	0.837	0.790	0.746	0.705	0.666	0.630	0.596	0.564
7	0.933	0.871	0.813	0.760	0.711	0.665	0.623	0.583	0.547	0.513
8	0.923	0.853	0.789	0.731	0.677	0.627	0.582	0.540	0.502	0.467
9	0.914	0.837	0.766	0.703	0.645	0.592	0.544	0.500	0.460	0.424
10	0.905	0.820	0.744	0.676	0.614	0.558	0.508	0.463	0.422	0.386
11	0.896	0.804	0.722	0.650	0.585	0.527	0.475	0.429	0.388	0.350
12	0.887	0.788	0.701	0.625	0.557	0.497	0.444	0.397	0.356	0.319
13	0.879	0.773	0.681	0.601	0.530	0.469	0.415	0.368	0.326	0.290
14	0.870	0.758	0.661	0.577	0.505	0.442	0.388	0.340	0.299	0.263
15	0.861	0.743	0.642	0.555	0.481	0.417	0.362	0.315	0.275	0.239

(n)	**11%**	**12%**	**13%**	**14%**	**15%**	**16%**	**17%**	**18%**	**19%**	**20%**
1	0.901	0.893	0.885	0.877	0.870	0.862	0.855	0.847	0.840	0.833
2	0.812	0.797	0.783	0.769	0.756	0.743	0.731	0.718	0.706	0.694
3	0.731	0.712	0.693	0.675	0.658	0.641	0.624	0.609	0.593	0.579
4	0.659	0.636	0.613	0.592	0.572	0.552	0.534	0.516	0.499	0.482
5	0.593	0.567	0.543	0.519	0.497	0.476	0.456	0.437	0.419	0.402
6	0.535	0.507	0.480	0.456	0.432	0.410	0.390	0.370	0.352	0.335
7	0.482	0.452	0.425	0.400	0.376	0.354	0.333	0.314	0.296	0.279
8	0.434	0.404	0.376	0.351	0.327	0.305	0.285	0.266	0.249	0.233
9	0.391	0.361	0.333	0.308	0.284	0.263	0.243	0.225	0.209	0.194
10	0.352	0.322	0.295	0.270	0.247	0.227	0.208	0.191	0.176	0.162
11	0.317	0.287	0.261	0.237	0.215	0.195	0.178	0.162	0.148	0.135
12	0.286	0.257	0.231	0.208	0.187	0.168	0.152	0.137	0.124	0.112
13	0.258	0.229	0.204	0.182	0.163	0.145	0.130	0.116	0.104	0.093
14	0.232	0.205	0.181	0.160	0.141	0.125	0.111	0.099	0.088	0.078
15	0.209	0.183	0.160	0.140	0.123	0.108	0.095	0.084	0.074	0.065

ANNUITY TABLE

Present value of an annuity of FRW 1 ie $\frac{1-(1+r)^{-n}}{r}$.

where r = interest rate

n = number of periods

Periods (n)	Discount rates (r) 1%	2%	3%	4%	5%	6%	7%	8%	9%	10%
1	0.990	0.980	0.971	0.962	0.952	0.943	0.935	0.926	0.917	0.909
2	1.970	1.942	1.913	1.886	1.859	1.833	1.808	1.783	1.759	1.736
3	2.941	2.884	2.829	2.775	2.723	2.673	2.624	2.577	2.531	2.487
4	3.902	3.808	3.717	3.630	3.546	3.465	3.387	3.312	3.240	3.170
5	4.853	4.713	4.580	4.452	4.329	4.212	4.100	3.993	3.890	3.791
6	5.795	5.601	5.417	5.242	5.076	4.917	4.767	4.623	4.486	4.355
7	6.728	6.472	6.230	6.002	5.786	5.582	5.389	5.206	5.033	4.868
8	7.652	7.325	7.020	6.733	6.463	6.210	5.971	5.747	5.535	5.335
9	8.566	8.162	7.786	7.435	7.108	6.802	6.515	6.247	5.995	5.759
10	9.471	8.983	8.530	8.111	7.722	7.360	7.024	6.710	6.418	6.145
11	10.368	9.787	9.253	8.760	8.306	7.887	7.499	7.139	6.805	6.495
12	11.255	10.575	9.954	9.385	8.863	8.384	7.943	7.536	7.161	6.814
13	12.134	11.348	10.635	9.986	9.394	8.853	8.358	7.904	7.487	7.103
14	13.004	12.106	11.296	10.563	9.899	9.295	8.745	8.244	7.786	7.367
15	13.865	12.849	11.938	11.118	10.380	9.712	9.108	8.559	8.061	7.606

(n)	11%	12%	13%	14%	15%	16%	17%	18%	19%	20%
1	0.901	0.893	0.885	0.877	0.870	0.862	0.855	0.847	0.840	0.833
2	1.713	1.690	1.668	1.647	1.626	1.605	1.585	1.566	1.547	1.528
3	2.444	2.402	2.361	2.322	2.283	2.246	2.210	2.174	2.140	2.106
4	3.102	3.037	2.974	2.914	2.855	2.798	2.743	2.690	2.639	2.589
5	3.696	3.605	3.517	3.433	3.352	3.274	3.199	3.127	3.058	2.991
6	4.231	4.111	3.998	3.889	3.784	3.685	3.589	3.498	3.410	3.326
7	4.712	4.564	4.423	4.288	4.160	4.039	3.922	3.812	3.706	3.605
8	5.146	4.968	4.799	4.639	4.487	4.344	4.207	4.078	3.954	3.837
9	5.537	5.328	5.132	4.946	4.772	4.607	4.451	4.303	4.163	4.031
10	5.889	5.650	5.426	5.216	5.019	4.833	4.659	4.494	4.339	4.192
11	6.207	5.938	5.687	5.453	5.234	5.029	4.836	4.656	4.486	4.327
12	6.492	6.194	5.918	5.660	5.421	5.197	4.988	4.793	4.611	4.439
13	6.750	6.424	6.122	5.842	5.583	5.342	5.118	4.910	4.715	4.533
14	6.982	6.628	6.302	6.002	5.724	5.468	5.229	5.008	4.802	4.611
15	7.191	6.811	6.462	6.142	5.847	5.575	5.324	5.092	4.876	4.675