CERTIFIED ACCOUNTING TECHNICIAN

STAGE 3 EXAMINATION

S3.2 MANAGEMENT ACCOUNTING

THURSDAY: 03 DECEMBER 2020

Instructions

1 Time allowed: **3 hours and 15 minutes**

2 This examination has **three** sections: **A, B and C.**

3 Section A has **10** multiple choice questions equal to 2 marks 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 – All TEN questions are compulsory and MUST be attempted

1. The following statements have been made about sources of data:

   (i) Primary data is more relevant than secondary, but the cost of obtaining it is usually higher.

   (ii) Government statistics and forecasts are not useful to the budgeting of private companies.

   (iii) Information from the internet is generally less reliable than information from published sources.

   Which of the above statements are correct?

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

(2 marks)

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2. The following statements have been made about budgeting:

   (i) Budgets always demotivate the managers who are tasked with achieving them.

   (ii) Budgets are never amended once they have been set.

   (iii) Zero based budgets involve starting with the previous year's budget and making some adjustments to it.

   (iv) Participative budgets are sometimes referred to as 'top down'.

   Which of the above statements is/are correct?

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

(2 marks)

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3. An investment has the following cash inflows and cash outflows:

Time	Cash flow per annum RWF million
0	(100,000)
1	40,000
2	40,000
3	40,000
4	50,000
5	50,000
6	(70,000)

What is the net present value of the investment at a discount rate of 10% to the nearest hundred million?

A RWF 149,600 million
B RWF (78,400 million)
C RWF 104,200 million
D RWF 25,200 million
E None of the above

(2 marks)

4. A manufacturing company uses a process which is highly labour intensive. The company uses standard costing and variance analysis to control the labour costs.

The following events occurred during the last month:

(i) Due to a shortage of labour, a lower grade of labour was used.

(ii) Due to a shortage of materials, a lower grade of materials was used.

(iii) Staff negotiated a higher rate per hour for labour and this was not reflected in the standard.

(iv) A machine which had not been maintained malfunctioned several times.

Which of the following would explain an adverse labour efficiency variance?

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

(2 marks)

5. The following possible problems of budgeting in public sector organisations have been identified:

(i) Knowing what the organisation's income will be

(ii) Having to meet demand for the service regardless of what the income is

(iii) Income is not related to activity while costs are

(iv) Lack of competition for many public sector bodies makes it difficult to set appropriate cost targets

Which of the above would be problems for budgeting in a state owned hospital, which is awarded a fixed amount of funding at the start of each year by the government?

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

(2 marks)

6. Which of the following would be classed as a primary source of data?

A Results of a market research project carried out on behalf of the company

B Results of a market research project into an industry published in a trade journal

C Information about demographics published by the National Institute of Statistics of Rwanda

D Information about inflation published by the National Bank of Rwanda

E None of the above.

(2 marks)

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7. A company is considering investing in a new machine. It would cost RWF 800 million and last for three years, at the end of which it would be disposed of for zero residual value. Each year of its life, the machine would generate cash flows of RWF 300 million pa. The company has a cost of capital of 10%.

What is the net terminal value of the investment in the machine?

A RWF 53.9 million
B RWF (53.9 million)
C RWF 71.8 million
D RWF (71.8 million)
E None of the above

(2 marks)

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8 The following statements have been made about sampling:

(i) A sampling frame is a numbered list of all items in a population.

(ii) Stratified sampling will usually provide a sample that is more representative of the population than random sampling.

(iii) Multi-stage sampling can only be used if a sampling frame exists for the population.

(iv) The use of random sampling ensures that representative samples are chosen.

Which of the above statements are correct?

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

(2 marks)

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9. Which of the following ratios does measures the liquidity of an organisation?

A Return on capital employed
B The current ratio
C The gross profit margin

D The asset turnover ratio
E None of the above

(2 marks)

10. The following statements have been made about public sector organisations:

(i) They have little control over their income
(ii) It may be difficult to measure their output
(iii) Their objectives are usually fairly clear
(iv) Public sector organisations generally focus on long-term rather than short-term objectives.

Which of the above statements is/are correct?

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

(2 marks)

Section B – BOTH questions are compulsory and MUST be attempted

11. Paradise Hotel is a four star Hotel in Kigali. It has 100 rooms, two bars and a restaurant. The hotel is privately owned by a foreign investor. You are a management accountant working for Paradise Hotel and you are reviewing the following description of the accounting systems by one of the audit staff:

    The management and financial accounts are produced on a bespoke accounting package that was developed some time ago by a student who was studying computer programming. At the end of each month, the chief accountant spends two days doing month-end adjustments. This includes calculating depreciation and posting depreciation journals to the system, booking accruals, prepayments provisions and allowances for bad debts.

    The rooms division has a system to record income from rooms. Every day, a "rooms revenue report" is produced that shows the total revenue for the previous night, and total payments received. Most payments are made by credit card, but some guests pay by cash, and some of the hotel's customers have a corporate account, paying the balance at the end of each month. Credit card receipts and cash are taken each morning to the cashier's office, which is located next to the accounting office, along with a copy of the 'rooms revenue report'. A copy of the 'rooms revenue report' is also given to the accounting staff so they can book revenue.

    The bars and restaurant have their own billing system. When customers order food or drinks, their order is entered into this system and a bill is produced for payment. At the end of each shift, the staff cash up. This involves reconciling the cash and credit card receipts to the end-of-shift report produced by the billing system. The cash and credit card receipts are then taken to the cashier's office, which is opened up for this purpose by a security guard.

    Each morning, the cashier checks that the cash and credit card receipts agree to the end of shift report, or notes any discrepancies. They then enter details of the income into a spreadsheet. This is passed to the accounting staff for entry into the accounting package. The cashier then walks to the local branch of the bank and pays in the cash.

    Purchases of food and beverage are booked based on suppliers' invoices. If the accounting staff have any queries about a particular invoice, they ask the food and beverage manager, who checks the invoice to see if it appears reasonable. Inventory counts of non-perishable food and drinks are carried out at the end of each month by warehouse staff, and a stock adjustment is recorded in the accounting system.

    Required

    Write a report to the Director of Finance that makes recommendations for improving the above system.

Total (10 marks)

12. Nadine is a wholesaler of household products. She buys products from local producers and importers, and sells them to retailers. Retailers buy from Nadine on credit and pay two months later.

Budgeted sales for the last five months of the year 2020 are as follows:

	August	*September*	*October*	*November*	*December*
	RWF million	RWF million	RWF million	RWF million	RWF million
Sales	33	37	40	38	27

All goods sold by Nadine are sold at a mark-up of 100%. Nadine always has enough inventory at the end of each month to satisfy 40% of the following month's sales. Suppliers are paid after one month.

Employee costs and other costs (excluding depreciation) amount to RWF 1.2 million per month.

Nadine is planning to replace some machinery in the warehouse in October. It is expected that the old machinery will be sold for RWF 50 million cash which will be received in October. The new machinery will cost RWF 300 million and will be paid for in November. The new machinery will be depreciated over four years, which represents a monthly depreciation charge of RWF 6.2 million per month.

Opening inventory at 1 September 2020 is expected to be RWF 7.4 million. Opening cash balances at 1 October 2020 are expected to be RWF 300 million.

Required

Prepare a monthly cash budget for October, November and December 2020 which clearly shows the forecast cash balances at the end of each month. **Total (10 marks)**

Section C – All THREE questions are compulsory and MUST be attempted

13. The Small Soap Co manufactures soap that is made of natural products and does not involve the use of industrially produced chemicals. The soap is made in batches of 100 bars. In the financial year ended on 31 May 2020, the company had budgeted to produce and sell 800 batches of the soap. The company has prepared the following statement that compares the budgeted and actual results for the year:

	Budgeted	*Actual*	*Variances*
Sales (batches)	800	768	(32)
	RWF 000	RWF 000	
Revenue	40,000	38,400	1,600 favourable
Variable production costs:			
Materials	(24,000)	(25,285)	1,285 adverse
Labour	(1,200)	(1,200)	0
Fixed production costs	(7,000)	(7,050)	50 adverse
Profit	7,800	4,865	2,935 adverse

The production manager has commented that the comparison of the budgeted and actual results is not valid as the actual volume of sales and production was not the same as the budgeted volume.

Required

(a) Prepare a new statement in the same format as above which compares a flexed budget with the actual results. **(4 marks)**

(b) The financial controller has provided you with the following additional information:

The standard cost of preparing a batch of 100 bars of soap is as follows:

	RWF
Materials: 25 kg at RWF 1,200 per kg	30,000
Labour: 3 hours at RWF 500 per hour	1,500
Standard cost	31,500

2,400 labour hours were worked.

19,450 kg of materials were used. The price of the materials increased because the supplier put the prices up. After the end of the year, another supplier was found who can supply the materials at the standard cost. There was no opening or closing inventory of materials or finished goods.

A machine break down occurred in April. Production was halted for two weeks while the company had to wait for spare parts from abroad.

Calculate the following variances for the year:

(i) Labour rate variance
(ii) Labour efficiency variance
(iii) Materials price variance

(iv) Materials usage variance **(8 marks)**

(c) Using the information from parts (a) and (b), evaluate the performance of the company for the year. **(8 marks)**

Total (20 marks)

14. The Town & Country Bank of Kigalo (TCBK) is a commercial bank. It offers retail banking services to individuals, including current accounts, personal loans and investment advice to wealthy individuals. It also provides commercial banking services to businesses, including current accounts and loans.

A new chief executive officer was appointed last year, and has introduced a Balanced Scorecard to measure the performance of the bank.

The following is the performance for the financial year ended on 31 May 2020 using the Balanced Scorecard:

Perspective	*Objective*	*KPI*	*Target*	*Actual*
Financial	Growth	% increase in income	25%	20%
	Survival	current ratio	2	3
Customer	Quality of service	Average score from customer surveys	4.5 (out of 5)	4
Internal business perspective	Efficiency	Income per employee	RWF 2m	RWF 2.2m
Learning & growth	Staff training	Days training per employee	3	1.5
	Geographic coverage	Number of new branches	10	12

Required

(a) Explain the advantages of using the Balanced Scorecard at TCBK. **(6 marks)**

(b) Evaluate the performance of the bank using the reported information in the Balanced Scorecard. **(10 marks)**

(c) Suggest and explain two additional performance measures for the customer perspective. (4 marks)

Total (20 marks)

15. Fun Toys LLC manufactures a small range of toys. The company is currently using absorption costing, whereby all overheads are absorbed based on labour hours.

The company is considering the introduction of activity based costing, and has identified four activities that it believes are the biggest cause of the overheads. These activities are as follows:

Activity	*Total cost* RWF 000	*Driver*
Machine maintenance	50,000	Machine hours
Machine set ups	70,000	Production runs
Storage costs	42,500	Storage space used
Procurement costs	30,000	Purchase orders

Information about the three products made at the factory are as follows:

	Toy A	*Toy B*	*Toy C*
Budgeted production	300,000	100,000	100,000
Materials costs per unit (RWF)	1,200	2,000	1,800
Labour costs per unit (RWF)	600	1,200	300
Machine hours per unit	0.5	2.0	1.5
Number of production runs	10	15	10
Storage space used M^2	30	20	35
Number of purchase orders	20	30	30

The labour cost per hour is RWF 600.

Required

(a) Calculate the unit cost of the three toys using absorption costing. **(4 marks)**
(b) Calculate the unit cost of the three toys using activity based costing. **(10 marks)**
(c) Explain the benefits to Fun Toys LLC of implementing activity based costing.

(6 marks)

Total (20 marks)

Total (100 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 RWF 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 RWF 1 ie $\frac{1-(1+r)^{-n}}{r}$.

where r = interest rate

n = number of periods

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	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