CERTIFIED ACCOUNTING TECHNICIAN (CAT)

STAGE 1 EXAMINATION

S1.2 PRINCIPLES OF COSTING

PILOT PAPER

ANSWERS

Answer Grid

1.	E	26.	D
2.	A	27.	C
3.	B	28.	A
4.	D	29.	C
5.	A	30.	B
6.	D	31.	B
7.	D	32.	A
8.	B	33.	C
9.	B	34.	B
10.	B	35.	C
11.	A	36.	D
12.	C	37.	B
13.	A	38.	B
14.	B	39.	C
15.	A	40.	E
16.	C	41.	A
17.	B	42.	A
18.	C	43.	C
19.	C	44.	D
20.	C	45.	C
21.	A	46.	E
22.	A	47.	B
23.	A	48.	C
24.	D	49.	B
25.	B	50.	C

Detailed answers to questions

Marking scheme

	Marks
(a) 2 marks for each correct answer	2
Total marks for this section	100

1. E None of the above

Capital transactions are the purchase and sale of items that are to be used in the business for a considerable period of time. Options A and D describe revenue transactions. Option B describes cash transactions. Option C describes credit transactions.

(LO 1.1.1)

2. A RWF27,720

	RWF
100 units @ 200	20,000
20 units @ 230	4,600
12 units @ 260	3,120
	27,720

If you chose RWF30,320 then you forgot to deduct the 10 rejected units (20,000 + 4,600 + 5,720).

If you chose RWF30,360 then you valued all 132 units at the rate of RWF230.

If you chose RWF34,320 then you valued all 132 units at the rate of RWF260.

(LO 1.2.7)

3. B RWF506,000

After the Day 5 issue, 120 units are left in inventory at RF3,600 each. 170 units are left in inventory at RF3,700 each.

Day 7 issue: 140 units

	RWF'000
120 @ RF3,600 (the items received on Day 3)	432,000
20 @ RF3,700 (the items in inventory on Day 1)	74,000
Total cost of issue	506,000

If you chose option A then you did 140 × RWF3,600 = RWF504,000 forgetting that 110 units of the day 3 receipts would have been used by the day 5 issue.

If you chose option C then you used the FIFO method (60 × RWF3,700) + (80 × RWF3,600) = RWF510,000.

If you chose option D then you used the FIFO method and didn't take into account the issue on day 5 (170 × RWF3,700 = RWF629,000).

(LO 2.1.5)

4. D RWF350,000 (costs 3 and 4)

Factory supervisor's wages (cost 1) are a production cost.

Bank interest on a business loan (cost 2) is a finance cost.

Costs of processing sales staff payroll (cost 5) is an administration cost.

(LO 1.2.1)

5. A Control

Comparing actual costs and revenues with budgeted results (ie variances) is control.

(LO 1.1.2/1.1.4)

6. D Paint used in the production of ornaments

Paint is a raw material in this case.

Toy cars waiting to have wheels attached and sheet metal rolled and cut but not yet assembled are both work in progress. Training shoes boxed and ready for sale are finished goods.

(LO 1.2.5)

7. D (ii) and (iv)

Management accounts are used to aid management to record, plan, control and make decisions. They incorporate non-monetary measures and therefore (i) is not correct. Financial accounts are mostly of a monetary nature and there is a legal requirement to prepare them. There is no legal requirement to prepare management accounts. Management accounts are prepared to help with decision making inside the business. They provide both an historical record and a future planning tool.

(LO 1.1.3)

8. B A transaction whereby payment is made at some future date

A transaction which involves a bank transfer could be either a credit or a cash transaction and therefore is not specifically the definition of a credit transaction. This also applies to a transaction involving the receipt of an invoice. A transaction whereby payment is immediate is the definition of a cash transaction.

(LO 1.1.1)

9. B Cheese used on the pizza is a direct material cost. Wages of employees who cook the pizza is a direct labour cost.

Indirect costs are amounts not spent directly on making or providing one product or service. Maintenance of cooking equipment and electricity are both indirect costs.

(LO 1.2.1)

10. B Insurance of the office building

Wages of sewing machinists and purchases of thread are production costs. Commission paid to sales staff is a selling and distribution cost.

(LO 1.2.1)

11. A Direct cost RWF22,800; Indirect cost RWF900

Direct cost

Basic wage: 35 hours × RWF600 = RWF21,000

Overtime basic wage: 3 hours × RWF600 = RWF1,800

Total direct cost = RWF22,800

If you chose RWF21,000 then you forgot to add the overtime basic wage.

Indirect cost

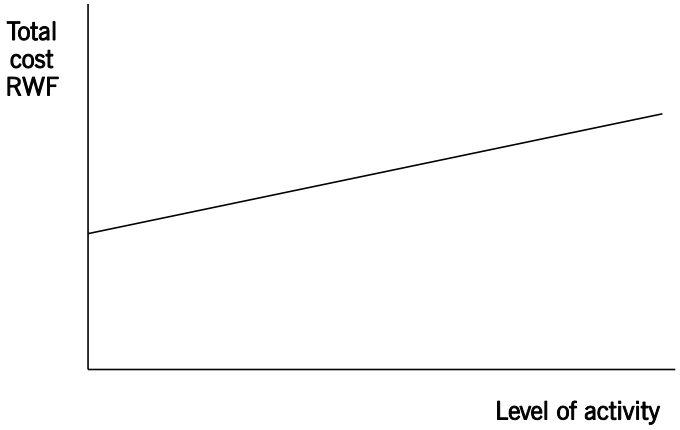
Premium: 3 hours × RWF600 × 0.5 = RWF900

If you chose RWF2,700 then you included the entire overtime payment instead of just the premium.

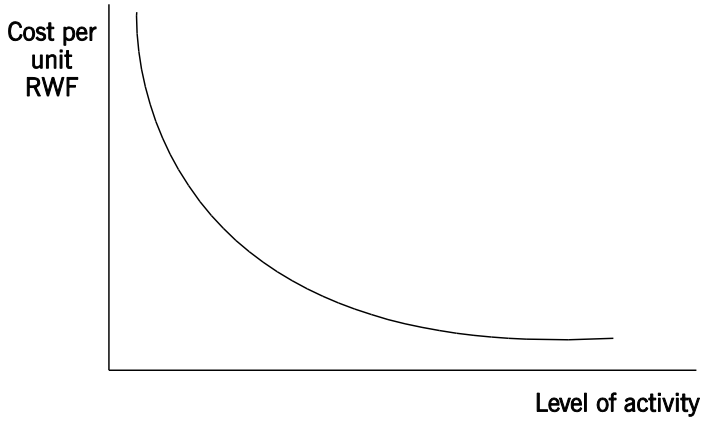
(LO 1.2.1/2.1.4)

12. C Direct material cost per unit

Telephone costs are semi-variable costs, made up of a fixed cost element and a variable cost element. Total wages and salaries costs would also be a semi-variable cost because of the fixed cost salaries and the variable cost of the piecework wages. Therefore the graph for these costs would look as follows:



Because fixed costs remain the same at different output levels, if a fixed cost per unit is calculated, this will decrease as output increases as the same cost is spread over more units, so each unit attracts a smaller share. A fixed production cost per unit graph would therefore be as follows:



(LO 1.2.2/2.1.3)

13. A RWF4,060

Prime cost = total direct cost

		RWF
Material A cost	2 kg @ RWF620 per kg	1,240
Material B cost	3 kg @ RWF560 per kg	1,680
Labour cost	2 hours @ RWF500 per hour	1,000
Packaging cost	RWF1,400/10	140
Prime cost		4,060

Fixed production costs and administration costs are indirect costs and are therefore not part of the prime cost.

If you chose RWF4,360, you incorrectly added the fixed production cost.

If you chose RWF4,380, you incorrectly added the fixed production cost and the administration costs.

If you chose RWF5,320, you forgot to divide the packaging cost by 10 to get the cost
per unit.

(LO 1.2.1)

14. B RWF12,500

	Production costs	*Output*
	RWF'000	Units
Highest	190,000	14,800
Lowest	168,750	13,100
	21,250	1,700

Variable production costs per unit $= \frac{\text{RWF21,250,000}}{\text{1,700 units}}$

= RWF12,500 per unit

If you chose RWF11,071, then you used 14,100 units and 14,800 units in your
high–low calculation instead of 13,100 units and 14,800 units.

If you chose RWF13,500, then you used 13,100 units and 14,100 units in your
high–low calculation instead of 13,100 units and 14,800 units.

If you chose RWF20,000, then you used 13,100 units and 14,300 units in your
high–low calculation instead of 13,100 units and 14,800 units.

(LO 1.2.2/2.1.3)

15. A The first two digits in the code refer to the cost centre and the last three digits are the type of expense. Thus for (24) maintenance and (260) depreciation of non-production equipment the code is 24260. The correct answer is A.

Options B and C have the wrong type of expense.

Option D has an incorrect cost centre code.

(LO 1.2.4)

16. C For (20) machining department use of (210) indirect materials the code is 20210.

Options A and B have the incorrect cost centre code. The code indicates the cost centre incurring the cost, ie receiving the materials. Option D has an incorrect expense type.

(LO 1.2.4)

17. B RWF11,000

		RWF
Monday	(100 × 35) = RWF3,500	3,500
Tuesday	(90 × 35) = RWF3,150 but RWF3,200 minimum	3,200
Wednesday	(100 × 35) + (20 × 40)	4,300
Total		11,000

If you chose RWF10,950, then you forgot that there would be a minimum wage of RWF3,200 for Tuesday (3,500 + 3,150 + 4,300 = 10,950).

If you chose RWF11,500, then you assumed that all 120 units would be paid at RWF40 on Wednesday (3,500 + 3,200 + 4,800 = 11,500).

If you chose RWF11,450, then you forgot that there would be a minimum wage of RWF3,200 for Tuesday and you assumed that all 120 units would be paid at RWF40 on Wednesday (3,500 + 3,150 + 4,800 = 11,450).

(LO 1.2.7/2.1.4)

18. C RWF12,200,000

	Units	RWF'000
High output	860	13,960
Low output	420	9,120
Difference	440	4,840

Variable cost per unit = RWF4,840,000/440 = RWF11,000 per unit

Total cost = Fixed costs + Variable costs

Fixed costs = RWF13,960,000 – (RF11,000 × 860) = RWF4,500,000

For 700 units, the total cost = RWF4,500,000 + (RF11,000 × 700) = RWF12,200,000

If you chose RWF7,700,000 then you only calculated the variable element (11,000 × 700).

If you chose RWF4,500,000 then you forgot to add the variable element.

If you chose RWF18,520,000 then you miscalculated fixed costs as RWF13,960,000 + (RF11,000 × 860) = RWF10,820,000. (10,820,000 + (11,000 × 700)) = RWF18,520,000

(LO 1.2.2/2.1.3)

19. C RWF6,000,000

		FIFO			*LIFO*		
	Date	Units	RWF/unit	*Value* RWFm	Units	RWF/unit	*Value* RWFm
Purchase 1.10		2,000	3,000	6.0	2,000	3,000	6.00
		3,000	3,300	9.9	3,000	3,300	9.90
	31.10	5,000		15.9	5,000		15.90
Issue	15.11	(2,000)	3,000	(6.0)	(3,000)	3,300	(9.90)
		(2,000)	3,300	(6.6)	(1,000)	3,000	(3.00)
		1,000		3.3	1,000		3.00
Purchase	20.11	1,500	2,900	4.35	1,500	2,900	4.35
		2,500		7.65	2,500		7.35
Issue	24.12	(500)	3,300	(1.65)	(500)	2,900	(1.45)
		2,000		6.00	2,000		5.90

If you chose RWF5,900,000 then you used the LIFO method, as shown above on the right. The question asked for the FIFO method.

If you chose RWF4,350,000 then you realised that there were 1,500 units left at RWF2,900 each but you forgot the 500 units from 31 October valued at RWF3,300.

If you chose RWF14,250,000 then you chose the value of the issues (RWF6m + RWF6.6m + RWF1.65m) rather than the closing inventory.

(LO 2.1.5)

20. C RWF6,024,000

Date	*Received* Units	*Issued* Units	*Balance*	*Total inventory value* RWFm	*Unit cost* RWF
1.10	2,000		2,000	6.000	3,000
31.10	3,000			9.900	
			5,000	15.900	3,180*
15.11		4,000		(12.720)**	
			1,000	3.180	
20.11	1,500			4.350	
			2,500	7.530	3,012
24.12		500		(1.506)	
Closing inventory			2,000	6.024	

*RWF15.9m/5,000 = RWF3,180
**4,000 × RWF3,180 = RWF12.72m

If you chose RWF5,800,000 you used the price of the latest goods received (RWF2,900 × 2,000).

If you chose RWF6,000,000 you used the price of the oldest items in inventory (RWF3,000 × 2,000).

If you chose RWF6,230,000 then you used a simple average (6m + 9.9m + 4.35m)/(2,000 +3,000 + 1,500) = 3,115 per unit. RWF3,115 × 2,000 =RWF6,230,000

(LO 2.1.5)

21. A RWF1,450,000

Under LIFO, the issue of 500 units on 24 December would be valued using the amount paid for the purchase on 20 November.

RWF4,350,000/1,500 units = RWF2,900 per unit

500 × RWF2,900 = RWF1,450,000

		LIFO		
		Units	RWF/unit	*Value* RWFm
Purchase	1/10	2,000	3,000	6.00
	31/10	3,000	3,300	9.90
		5,000		15.90
Issue	15/11	(3,000)	3,300	(9.90)
		(1,000)	3,000	(3.00)
		1,000		3.00
Purchase	20/11	1,500	2,900	4.35
		2,500		7.35
Issue	24/12	(500)	2,900	(1.45)
		2,000		5.90

If you chose RWF1,650,000 then you incorrectly used FIFO to value the issue.

If you chose RWF5,900,000 then you calculated the value of the closing inventory rather than the issue.

If you chose RWF12,900,000 then you valued the issue on 15 November rather than
24 December.

(LO 2.1.5)

22. A Income and material

	A	B	C	D	
1	Income/Expenditure	Budget RWF'000	Variance RWF'000	Adverse (A) or Favourable (F)	
2	Income	36,000	3,000	F	3,000/36,000 = 8.3%
3	Material	9,200	828	A	828/9,200 = 9.0%
4	Labour	10,000	650	F	650/10,000 = 6.5%
5	Overheads	8,500	350	A	350 / 8,500 = 4.1%

(LO 2.2.1)

23. A Fixed costs = RWF5,000,000. Managers' salaries are a fixed cost and factory insurance is a fixed cost. These costs don't change as production levels change.

Semi-variable costs = RWF5,000,000. Wages for production workers are a semi-variable cost. There is a fixed element (the fixed wage) and a variable element (volume related bonus).

Variable costs = RWF2,000,000. Packaging is a variable cost. The cost varies with the level of production.

(LO 1.2.2/2.1.3)

24. D RWF15,746 and RWF10,006

Production

The variance is adverse which means that the actual cost is more than budget. Budget therefore = RWF16,336 – RWF590 = RWF15,746.

Administration

The variance is favourable which means that the actual cost is less than budget. Budget therefore = RWF9,756 + RWF250 = RWF10,006.

(LO 2.2.1)

25. B Type 2 is a variable cost.

The cost per unit at 3,000 units = RWF15m/3,000 = RWF5,000

The cost per unit at 6,500 units = RWF32.5m/6,500 = RWF5,000

As the variable cost per unit is the same at both activity levels, we can assume that this is wholly a variable cost.

Type 1 is a fixed cost because the total cost is the same regardless of the activity level.

Type 3 is a semi-variable cost. The cost per unit reduces the higher the volume.

Type 4 is a stepped fixed cost because the total cost steps up as the activity reaches certain levels.

(LO 1.2.2/2.1.3)

26. D Payment method 4 is time rate plus bonus.

Payment method 1 is piecework with a bonus. Labour is paid a standard rate per unit.

Payment method 2 is differential piecework as it offers higher rates as output increases.

Payment method 3 is time rate as labour is paid per hour.

(LO 1.2.1/2.1.4)

27. C RWF6.5 million

The direct costs are the direct materials and the direct labour. The factory insurance is an overhead and therefore not a direct cost.

(LO 1.2.1)

28. A Profits would increase by RWF3,300.

Under the LIFO method the value of the issues would be:
(220 × RWF40) + (30 × RWF25) = RWF9,550

Under the FIFO method the value of the issues would be:
(250 × RWF25) = RWF6,250

The difference between the values of issues = RWF9,550 – RWF6,250 = RWF3,300

Since the issues are valued at a lower cost, this increases the profit.
If you chose RWF10,000 then you valued all of the issue at RWF40.

(LO 2.1.5)

29. C RWF11,200

The fixed cost per unit = RWF24 million/20,000 = RWF1,200

Total cost per unit = Fixed cost per unit + Variable cost per unit

= RWF1,200 + RWF10,000

= RWF11,200

If you chose RWF10,000 then you only included the variable cost per unit.

If you chose RWF224 million then you calculated the total cost (RWF24m + (10,000 × 20,000)) instead of the total cost per unit.

If you chose RWF1,200 then you forgot to include the variable cost per unit.

(LO 1.2.2/2.1.3)

30. B RWF14 million

The manager of a profit centre is responsible for revenues and costs only, therefore the manager is responsible for RWF30 million – RWF16 million = RWF14 million.

If you chose RWF4 million then you included the capital expenditure (RWF30m – RWF16m – RWF10m) but only an investment centre manager would be responsible for capital expenditure.

If you chose RWF16 million then you only included the costs. This would be correct if the centre was treated as a cost centre.

If you chose RWF30 million then you only included the revenue. This would be correct if the centre was treated as a revenue centre.

(LO 1.2.3)

31. B 39 hours

If Dative had worked 37 hours (ie no overtime) then she would have earned 37 × RWF549 = RWF20,313. But she earned more than this, therefore she must have worked overtime.

Gross wage less 37 hours wage = RWF21,960 – RWF20,313 = RWF1,647.

So RWF1,647 was the overtime wage paid at time and a half.

Number of overtime hours worked = RWF1,647/(549 × 1.5) = 2 hours

Therefore total hours worked = 37 + 2 = 39 hours

If you chose 26.7 hours then you assumed all hours were paid at time and a half (21,960/(549 × 1.50).

If you chose 40 hours then you assumed that all hours were paid at basic rate (21,960/ RWF549).

If you chose 41.5 hours then you made a calculator error by typing in 1,647/549 × 1.5 instead of 1,647/(549 ×1.5) and this gave you 4.5 hours of overtime.

(LO 2.1.4)

32. A RWF940,000 Favourable

RWF32,580,000 – RWF31,640,000 = RWF940,000. The variance is favourable because the actual cost was less than the budgeted cost.

If you chose RWF64,220,000 then you added the budget and actual costs.

(LO 2.2.1)

33. C Statement 1 is true and statement 2 is false.

RWF75,920,000 – RWF80,476,000 = RWF4,556,000. The variance is adverse because the actual cost was more than the budgeted cost.

RWF4,556,000/RWF75,920,000 = 6%. As this is an adverse variance and over 5%, it is significant.

(LO 2.2.1)

34. B Both statements are false.

RWF44,340,000 – RWF41,680,000 = RWF2,660,000. The variance is favourable because the actual cost was less than the budgeted cost.

RWF2,660,000/RWF44,340,000 = 6%. As this is a favourable variance and less than 7%, it is not significant so statement 1 is false.

The administration overhead variance is favourable which means that the actual cost was less than the budgeted cost, by RWF1,560,000. Therefore the actual cost was RWF11,360,000 – RWF1,560,000 = RWF9,800,000.

(LO 2.2.1)

35. C RWF250 million

Classifying by element means splitting the costs into materials, labour and expenses.

Materials = RWF400m

Labour = RWF100m

Expenses = RWF50m + RWF200m = RWF250m

(LO 1.2.1)

36. D Statement 1 is false and statement 2 is true.

The method used is not LIFO. The issue on 24 March is valued at RWF840 per litre (ie the value of the balance on 15 March – 3,360,000/4,000 = RWF840 per litre). If LIFO had been used then the issue would have been at RWF880 per litre (ie the cost per litre on 16 March).

On 15 March the balance fell below 5,000 to 4,000. On 16 March the quantity ordered was 5,000. On 24 March the balance was 6,000 (ie greater than 5,000) and therefore the next reorder did not have to be 5,000.

(LO 1.2.6)

37. B RWF371,250

Normal working time = 825 hours × RWF450 = RWF371,250

If you chose RWF238,500 then you used the wrong number of hours (825 – 208 – 87 × RWF450).

If you chose RWF504,000 then you used the total hours worked (1,120 × RWF450). The question simply asks for the normal time working.

If you chose RWF589,950 then you calculated the total labour cost.

(LO 1.2.7/2.1.4)

38. B RWF46,800

Premium cost of time and a half = 208 hours × RWF225 = RWF46,800 (Remember that the premium is just the extra amount which is paid per hour on top of the normal RWF450 per hour.)

If you chose RWF19,575 then you used the wrong number of hours (87 × RWF225).

If you chose RWF93,600 then you calculated the overtime premium at double time
(208 × RWF450).

If you chose RWF140,400 then you calculated the basic rate and the overtime premium (208 × RWF450 × 1.5).

(LO 1.2.7/2.1.4)

39. C RWF533,000

Total labour cost

= Hours at basic rate + Hours at RWF250 premium + Hours at RWF500 premium

= ((725 + 138 + 67) × RWF500) + (138 × RWF250) + (67 × RWF500)

= RWF465,000 + RWF34,500 + RWF33,500

= RWF533,000

Alternatively you could have calculated it as:

(725 × RWF500) + (138 × RWF750) + (67 × RWF1,000) = RWF533,000

If you chose RWF430,500 then you missed the basic wage element of the overtime
((725 × RWF500) + (138 × RWF250) + (67 × RWF500)).

If you chose RWF465,000 then you missed off the overtime premium (930 × RWF500).

If you chose RWF567,500 then you calculated all of the overtime at double time (725 × RWF500) + (138 × RWF1,000) + (67 × RWF1,000).

(LO 1.2.7/2.1.4)

40. E None of the above

Financial accounts (rather than management accounts) are prepared for and used by shareholders, auditors and tax authorities. Accounts are not usually prepared with shop floor workers in mind.

(LO 1.2.1/2.1.4)

41. A Royalties for novel writers = RWF50,000 and total advertising cost = RWF150,000

Code 50530 = Textbooks – advertising RWF65,000

Code 60530 = Course notes – advertising RWF85,000

So total advertising cost = RWF65,000 + RWF85,000 = RWF150,000

Code 70510 = Novels – Royalties – RWF50,000

Code 80510 = Children's books – Royalties – RWF70,000

If you chose B then you added the children's books royalties when the question asks for novel writers' royalties. You also forgot to include the Course notes advertising.

If you chose C then you forgot to include the Course notes advertising.

If you chose D then you added the children's books royalties when the question asks for novel writers' royalties.

(LO 1.2.1/2.1.4)

42. A Variable cost per unit = RWF732. Total cost per unit = RWF4,160

The variable cost per unit is the material cost + labour cost/number of units.

RWF6,600,000 + RWF3,645,000 = RWF10,245,000

RWF10,245,000/14,000 = RWF732 per unit

	RWF'000
Material 11,000 kg × RWF600	6,600
Labour 8,100 hours × RWF450	3,645
Expenses	48,000
	58,245

Total costs	RWF4,160

Cost per unit (÷14,000)

If you chose RWF1,050 for the variable cost, you were right to realise that this was the material and labour cost, but you added the cost per kg and the cost per hour instead of per unit (RWF600 + RWF450).

If you chose RWF4,479 for the total cost, then you calculated the variable cost as RWF1,050 and added the expenses.

(LO 1.2.2/2.1.3)

43. C RWF650,000

The manager responsibilities are as follows:

Revenue – sales manager

Materials – production manager

Labour – production manager

Production overheads – production manager

Interest – finance manager

So the production manager is responsible for RWF300,000 + RWF250,000 + RWF100,000 = RWF650,000.

(LO 2.2.2)

44. D 3,300 Favourable

Income/Expenditure	Budget RWF'000	Actual RWF'000	Variance
Income	75,000	78,000	3,000 F
Material	18,600	19,100	500 A
Labour	12,400	11,800	600 F
Overheads	15,500	15,300	200 F
			3,300 F

If you chose 2,700 then you assumed that the income variance was adverse. Actual revenue was better than budget and is therefore a favourable variance.

(LO 2.2.1)

45. C RWF430

		RWF
Basic wage	34 × 37 hours × RWF550	691,900
Overtime	34 × 6 hours × RWF825	168,300
		860,200

Labour cost per unit = (RWF860,200/2,000) = RWF430

If you chose RWF402 then you forgot to include the overtime premium (34 × 43 hours × RWF550)

If you chose RWF860,200 then you forgot to divide by the number of units to get the unit cost.

If you chose RWF374 then you calculated the overtime at RWF275 instead of RWF825.

(LO 1.2.7)

46. E None of the above

A cost centre is a part of an organisation to which costs are charged. Expenses (eg depreciation) and costs (eg labour costs) cannot be cost centres and an entire business organisation or a supermarket is likely to be broken down into several cost centres.

(LO 1.2.3)

47. B RWF170,000

The flour and the sugar would be classed as raw materials (RWF150,000).

The cakes ready for sale would be classed as finished goods (RWF300,000).

(LO 1.2.5)

48. C Statement 1 is true and statement 2 is false.

A budget is a financial plan for an organisation, made in advance. If actual revenue is less than budget then the variance is adverse.

(LO 2.2.1)

49. B RWF1.25 million

The overhead costs are the indirect costs, ie the costs which cannot be directly identified with making a particular product or producing a particular fruit. These costs are the rent and the telephone costs.

(LO 1.2.1/2.1.4)

50. C Statement 1 is true and statement 2 is false.

A significant revenue variance would be reported to the sales manager. A significant expenses variance would be reported to the administration manager.

(LO 2.1.4)