INTERNATIONAL SECONDARY CERTIFICATE EXAMINATION
MAY 2023

QUANTITATIVE REASONING: PAPER I

MARKING GUIDELINES

Time: 3 hours | 150 marks

These marking guidelines are prepared for use by examiners and sub-examiners, all of whom are required to attend a standardisation meeting to ensure that the guidelines are consistently interpreted and applied in the marking of candidates' scripts.

The IEB will not enter into any discussions or correspondence about any marking guidelines. It is acknowledged that there may be different views about some matters of emphasis or detail in the guidelines. It is also recognised that, without the benefit of attendance at a standardisation meeting, there may be different interpretations of the application of the marking guidelines.

QUESTION 1

1.1	1.1.1	A (R18,38)	
	1.1.2	C (R199,99)	
	1.1.3	C (6,7 days)	
	1.1.4	D (R495,00)	
	1.1.5	C (R11)	
	1.1.6	B (87%)	
	1.1.7 (a)	D (1)	
	(b)	C (0,6 × 0,5)	
1.2	1.2.1	20% × 2 499 = R499,80	
	1.2.2	R2 499 – R499,80 = R1 999,20	
	1.2.3	R1 999,20 × 9,25% = R184,93	
	1.2.4	R1 999,20 + R184,93 × 2 = R2 369,05	
1.3	1.3.1	22,02%	
	1.3.2	22,02% – 7,49% = 14,53%	
	1.3.3	9,88 × 115,73% = 11,43 Zambian kwacha	

QUESTION 2

2.1		275 000 × 300% = 825 000 825 000 + 275 00 = 1 100 000 **OR** 275 000 × 400% = 1 100 000	
2.2	2.2.1	October, November, December	
	2.2.2	R575 – R481 = R94	
	2.2.3	Median amount × 10% = R48,10 / R57,50 / R43,80 R10 to R14 is way below 10% of the median **OR** R10 ÷ 10% = R110 R14 ÷ 10% = R140 These totals are way below the median totals.	
	2.2.4	R226 – R26 = R200 R26 ÷ R200 × 100 = 13%	
2.3	2.3.1	124 stores	
	2.3.2	30	
	2.3.3	R63,50 + R50 + R10 = R123,50	
	2.3.4	18:124 = 9:62	
2.4		75% × 360 **OR** $\frac{3}{4} \times 360$ = 270 = 270	
2.5	2.5.1 (a) (b)	Increments of 2% Q1 = July, Aug, Sept 2019 Q2 = Oct, Nov, Dec 2019 } (months) (year) Q3 = Jan, Feb, March 2020 Q4 = April, May, June 2020 } (months) (year)	

	2.5.2	12% – 7,5% = 4,5% (Accept 12% – 7% = 5%)	
	2.5.3	The grey bar is below the x-axis which means the percentage was negative. There was no growth there was actually a decline/decrease. –4,8% (Accept –5%)	
	2.5.4	Q1 = 10 – 5,75 = 4,25 (accept 10 – 6 = 4) Q2 = 10,5 – 3,5 = 7 Q3 = 12 – 7 = 5 Q4 = 2 – (-5) = 7 Greatest Difference = Q2 and Q4	
2.6		N$127,99 = P74,95 (Pula) N$ 1 = P0,59	

QUESTION 3

3.1		Unemployment Insurance Fund	
3.2		R3 554,10 × 12 = R42 649,20 This is much less than R350 000 **OR** R350 000 ÷ 12 = R29 166,67 This is much higher than his contribution.	
3.3		Taxable Income = R239 050,80 R38 916 + 26% × (R239 050,80 – **R216 200**) = R38 916 + 26% × (**R22 850,80**) = **R44 857,21** **R44 857,21** – **R15 714** – R888 Income Tax = **R28 255,21**	
3.4		Contributions = 2nd bracket R3 080 + R2 315 + R1 200 (all 3 values) = R6 595 per month (only if 3 values)	
3.5		(payslip below)	

Description	Earnings		Deductions		
Basic Salary	R	23 475,00			
Union Fees			R	45,00	
U.I.F.			R	177,12	
Pension			**R**	**3 554,10**	✓ a
Medical Aid			**R**	**6 595,10**	✓ ca
Income Tax			**R**	**2 354,60**	✓ ✓ m ca
Total	**R**	**23 475,00** ✓	**R**	**12 725,92**	✓ ca
Payment Date : June 25, 2021	**NET PAY = R10 749,08**				✓ m ✓ ca
Bank Name : Nedbank					
Bank Account Name : ALEX MNOBO					
Bank Account # : 1234567890					

3.6		Graph 1 = D Graph 2 = C Graph 3 = A	

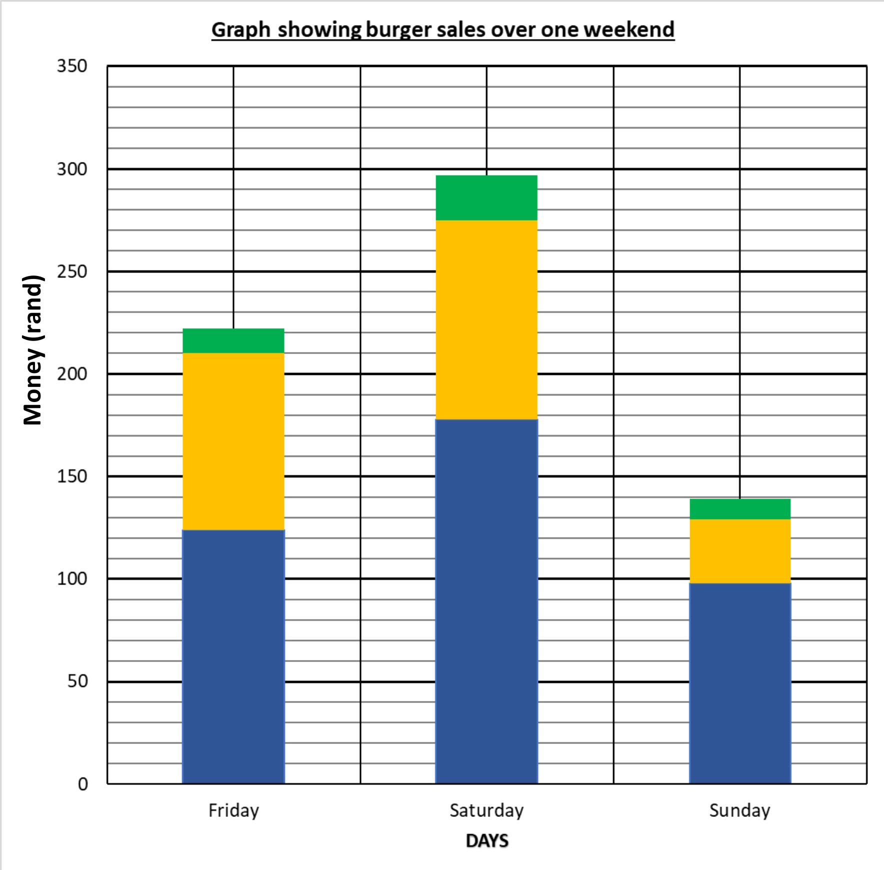
QUESTION 4

4.1	4.1.1	R120 – R85 = R35	
	4.1.2	$\frac{R85}{R35} \times 100\% = 242{,}86\%$	
	4.1.3 (a)	E = R250 + R35 × no. of sets	
	(b)	A = 3 × R120 = R360 B = R250 + R35 × 7 = R495 C = R1 080 ÷ R120 = 9 **OR** C = (R565 – R250) ÷ 35 = 9	
	(c)	Given values = 38 38 + C = 47 38 + 9 = 47 He sold 47 sets.	
	(d)	Weekend 4	
	(e)	Weekend 5 R240 – R320 = –R80 R80 Loss	
	(f)	Total expenses = R3 645 Total income = R5 640 Profit = R5 640 – R3 645 = R1 995	
4.2	4.2.1	$\frac{1}{5}$	
	4.2.2	$\frac{1}{4}$	
4.3	4.3.1	(see table below)	
	4.3.2	R64,50 × 140% = R90,30 Weekend total = 26 hours Week total = 29 hours (29 × R64,50) + (26 × R90,30) = R1 870,50 + R2 347,80 = R4 218,30	

4.3.1

	Mon	Tues	Wed	Thur	Fri	Sat	Sun	TOTAL
Week 1	3		2		3		4	12
Week 2		3		4		6	6	19
Week 3			4		2	5	5	**16✓a**
Week 4	2	2		4				8
TOTAL	5	5	6	8	5	**11✓a**	15	**55✓a**

QUESTION 5

5.1		Heading *y*-axis label *x*-axis label Key: BLUE = Beef YELLOW = Chicken GREEN = Vegetarian Sunday bar  	
5.2	5.2.1	40	
	5.2.2	True	
	5.2.3	IQR-Chips = 70 – 20 = 50 (IQR) IQR-Burgers = 80 – 30 = 50 Chantal is correct	

Total: 150 marks