NON-CALC C · MARK SCHEME

GCSE Mathematics · Foundation Tier

40 marks · 45 minutes · Non-calculator

M method **A** accuracy (depends on M) **B** independent **P** process **C** communication
oe or equivalent cao correct answer only ft follow through Accept any correct, fully justified method.

Question 1

Order of operations · N3 · Number · AO1 · 1 mark

QN	ANSWER	MARK	GUIDANCE
1	18	B1	cao

Question 2

Factors and prime factors · N4 · Number · AO1 · 3 marks

QN	ANSWER	MARK	GUIDANCE
2(a)	6, 9 or 18	B1	Any one of these
2(b)	2 × 2 × 3 × 3	M1	For a correct method, e.g. a factor tree with at least two correct branches, or 2, 2, 3, 3 listed
		A1	Accept $2^2 \times 3^2$

Question 3

Coordinates · A8 · Algebra · AO1/2 · 2 marks

QN	ANSWER	MARK	GUIDANCE
3(a)	(–3, 3)	B1	cao
3(b)	(1, –1)	B1	Accept D marked correctly on the grid if the coordinates are not written

Question 4

Converting units · N13 · R1 · Ratio & proportion · AO1 · 2 marks

QN	ANSWER	MARK	GUIDANCE
4(a)	3500	B1	cao
4(b)	135	B1	cao

Question 5

Mode, median and range · S4 · Statistics · AO1/2 · 4 marks

QN	ANSWER	MARK	GUIDANCE
5(a)	7	B1	cao
5(b)	5.5	M1	For the numbers in order, 2 3 4 7 7 9, or for identifying 4 and 7 as the middle pair
		A1	oe
5(c)	12 or –1	B1	Either value

Question 6

Probability · P3 · Probability · AO1/2 · 2 marks

QN	ANSWER	MARK	GUIDANCE
6(a)	$\frac{2}{6}$	B1	oe, e.g. $\frac{1}{3}$
6(b)	No, with reason	C1	e.g. there are 3 even numbers out of 6, so the probability is $\frac{3}{6} = \frac{1}{2}$

Question 7

Solving equations · A17 · Algebra · AO1/2 · 3 marks

QN	ANSWER	MARK	GUIDANCE
7(a)	7	B1	cao
7(b)	Mistake explained	C1	e.g. she added 11 to 2 instead of subtracting 11 from both sides
	–3	A1	cao

Question 8

Transformations · G7 · Geometry & measures · AO1 · 3 marks

QN	ANSWER	MARK	GUIDANCE
8(a)	**Reflection in the *y*-axis**	**B1**	For 'reflection' (or 'reflect')
		B1	For 'in the *y*-axis' or 'in $x = 0$'. A second transformation scores B0 B0
8(b)	**Triangle at (1, –4), (3, –4), (1, –1)**	**B1**	cao

Question 9

Fractions of amounts · N12 · N2 · Number · AO3 · 3 marks

QN	ANSWER	MARK	GUIDANCE
9	**660**	**P1**	For 120 ÷ 4 × 3 (= 90) or 120 ÷ 4 (= 30)
		P1	For 90 × 6 + 30 × 4 (= 540 + 120)
		A1	cao

Question 10

Ratio and fractions · R4 · R8 · Ratio & proportion · AO1/2 · 3 marks

QN	ANSWER	MARK	GUIDANCE
10(a)	**3 : 4**	**M1**	For 280 – 120 (= 160), or 120 : 160 or any correct partial simplification, e.g. 12 : 16
		A1	cao
10(b)	$\frac{3}{7}$	**B1**	oe in simplest form; ft their ratio

Question 11

Sequences · A23 · A24 · Algebra · AO1/2 · 3 marks

QN	ANSWER	MARK	GUIDANCE
11(a)	**8**	**B1**	cao
11(b)	**–7**	**B1**	cao
11(c)	**No, with reason**	**C1**	e.g. the terms go 5, 2, –1, so 1 is missed out; or 20 – 1 = 19 is not a multiple of 3

Question 12

Comparing with percentages · R9 · N12 · Ratio & proportion · AO2 · 2 marks

QN	ANSWER	MARK	GUIDANCE
12	**Jordan, with 80%**	**M1**	For $\frac{36}{45}$ written as a percentage or as $\frac{80}{100}$ or $\frac{4}{5}$, or 78% of 45 (= 35.1)
		C1	For 'Jordan' with 80% (or 35.1 < 36) shown

Question 13

Area with circles · G17 · G16 · Geometry & measures · AO3 · 3 marks

QN	ANSWER	MARK	GUIDANCE
13	**144 – 36π**	**P1**	For 12 × 12 (= 144)
		P1	For radius = 6 and π × 6^2 (= 36π)
		A1	oe, e.g. 36(4 – π)

Question 14

Problem solving with division · N2 · N16 · Number · AO3 · 3 marks

QN	ANSWER	MARK	GUIDANCE
14	270	P1	For 75 + 6 (= 81)
		P1	For 81 ÷ 16 = 5 remainder 1, so 6 minibuses
		A1	cao. 5 minibuses (£225) scores P1 P0 A0

Question 15

Ratio problem · R5 · Ratio & proportion · AO3 · 3 marks

QN	ANSWER	MARK	GUIDANCE
15	10	P1	For 7 – 3 = 4 parts = 20
		P1	For 1 part = 5
		A1	cao

Paper overview

Q	TOPIC	SPEC REF	STRAND	AO	MARKS
1	Order of operations	N3	Number	AO1	1
2	Factors and prime factors	N4	Number	AO1	3
3	Coordinates	A8	Algebra	AO1/2	2
4	Converting units	N13 · R1	Ratio & proportion	AO1	2
5	Mode, median and range	S4	Statistics	AO1/2	4
6	Probability	P3	Probability	AO1/2	2
7	Solving equations	A17	Algebra	AO1/2	3
8	Transformations	G7	Geometry & measures	AO1	3
9	Fractions of amounts	N12 · N2	Number	AO3	3
10	Ratio and fractions	R4 · R8	Ratio & proportion	AO1/2	3
11	Sequences	A23 · A24	Algebra	AO1/2	3
12	Comparing with percentages	R9 · N12	Ratio & proportion	AO2	2
13	Area with circles	G17 · G16	Geometry & measures	AO3	3
14	Problem solving with division	N2 · N16	Number	AO3	3
15	Ratio problem	R5	Ratio & proportion	AO3	3
Total					**40**

Marks by strand

Number	**10 marks (25%)**
Algebra	**8 marks (20%)**
Ratio & proportion	**10 marks (25%)**
Geometry & measures	**6 marks (15%)**
Probability	**2 marks (5%)**
Statistics	**4 marks (10%)**

Marks by assessment objective

AO1	Standard techniques	**19 marks (48%)**
AO2	Reasoning	**9 marks (22%)**
AO3	Problem solving	**12 marks (30%)**